

RCSI Bahrain Publications 2005 with abstracts

1. Lynch CD, MacGillycuddy CT, O'Sullivan VR. Pierre Fauchard and his rôle in the development of obturators. British Dental Journal. 2005 //;199(9):603-5.

The design and fabrication of oral appliances to replace parts of the palate missing due to congenital defects or lost through tumours, infection or trauma has been a considerable challenge for clinicians throughout the history of dentistry. Significant advances were made during the eighteenth century towards resolving the problem of constructing satisfactory obturators by the first 'surgeon-dentist', Pierre Fauchard. This paper reviews his innovative designs.

2. Montgomery AJ, Panagopolou E, Benos A. Emotional labour at work and at home among Greek health-care professionals. Journal of Health, Organisation and Management. 2005 //;19(4-5):395-408.

Purpose - The emotionally taxing nature of health-care work has been increasingly recognized. In parallel, the field of work and family has been searching for more specific antecedents of both work interference with family (WFI) and family interference with work (FWI). The current study aims to examine the relationship between surface acting and hiding negative emotions with WFI and FWI among Greek health-care professionals.
Design/methodology/approach - The research is a cross-sectional study of 180 Greek doctors and 84 nurses using self-report measures. **Findings** - Results indicated that, for doctors, surface acting at work was positively related to WFI and, for nurses, surface acting at home was positively related to FWI. **Research limitations/implications** - The respondents were sampled on a convenience basis and the non-random procedure may have introduced unmeasured selection effects. The present study is cross-sectional and thus the postulated relationships cannot be interpreted causally. **Practical implications** - Emotional management training and opportunities for emotional decompression for Greek health-care professionals should be explored. In terms of medical education, the need to train students to understand and cope with emotional demands is an important first step. This research highlights the need for communication-skills training courses facilitating emotional awareness and emotional management. **Originality/value** - These findings position emotional labour as an important antecedent of both WFI and FWI. © Emerald Group Publishing Limited.

RCSI Bahrain Publications 2006 with abstracts

3. Amin FA, Fedorowicz Z, Montgomery AJ. A study of knowledge and attitudes towards the use of evidence-based medicine among Primary Health Care Physicians in Bahrain. Saudi Medical Journal. 2006 //;27(9):1394-6.

Objective: A study of perceptions and attitudes towards the use of evidence-based medicine (EBM) among family physicians in Bahrain. Methods: A systematically developed, anonymous, self administered 13 item questionnaire was mailed to 124 Bahraini family physicians in the Ministry of Health, Bahrain between January and April 2004. The response rate was 65%. Data were analyzed using the Statistical Package for Social Sciences (Windows version 11.00). Results: The respondents (n=81) were mainly female (65.4%) with a mean age of 40 (SD 7.7) years, with 12.7 (SD 8.3) years since graduation. Forty-two percent had attended EBM workshops and 61 % claimed to use EBM in their practice. Those who had attended a workshop were more likely to assert that they were practicing EBM (82% versus 47%; p=0.001). Less than 10% selected 'patient's choice' as a component of EBM. The 81.5% of respondents agreed their patients were willing to participate in decision making but 50% felt that only 10-25% of their patients were capable. "No time" (53.1%) and "no ready access to resources" (73.5%) were the most cited barriers, 32% of respondents agreed that EBM is not applicable to their culture. Conclusions: Most family physicians in Bahrain claimed to use EBM in their practice, particularly if they had attended an EBM workshop. However, most of them did not consider patients' values as a component of EBM. A substantial minority considered that EBM is inapplicable to their culture.

4. Henari FZ, Al-Saie A. Nonlinear refractive index measurements and self-action effects in Roselle-Hibiscus Sabdariffa solutions. Laser Physics. 2006 //;16(12):1664-7.

We report the observation of self-action phenomena, such as self-focusing, self-defocusing, self-phase modulation and beam fanning in Roselle-Hibiscus Sabdariffa solutions. This material is found to be a new type of natural nonlinear media, and the nonlinear refractive index coefficient has been determined using a Z-scan technique and by measuring the critical power for the self-trapping effect. Z-scan measurements show that this material has a large negative nonlinear refractive index, $n_2 = 1 \times 10^{-4}$ esu. A comparison between the experimental n_2 values and the calculated thermal value for n_2 suggests that the major contribution to nonlinear response is of thermal origin. © Nauka/Interperiodica 2006.

5. Lynch CD, O'Sullivan VR, McGillycuddy CT. Pierre Fauchard: The 'father of modern dentistry'. British Dental Journal. 2006 //;201(12):779-81.

The development of the modern practice of dentistry can be traced to the work and life of Pierre Fauchard, a French dentist who worked in the first half of the eighteenth century. Fauchard was an exceptionally gifted and talented practitioner, who introduced many innovations to dentistry. In a significant break with the tradition of the time, he shared his knowledge and techniques with colleagues, and published these in the first comprehensive dental textbook. This paper reviews his life and contribution to modern dentistry. © British Dental Journal 2006.

6. Montgomery AJ, McGee HM, Shannon W, Donohoe J. Factors influencing general practitioner referral of patients developing end-stage renal failure: A standardised case-analysis study. BMC Health Services Research. 2006 //;6.

Background: To understand why treatment referral rates for ESRF are lower in Ireland than in other European countries, an investigation of factors influencing general practitioner referral of patients developing ESRF was conducted. Method: Randomly selected general practitioners (N = 51) were interviewed using 32 standardised written patient scenarios to elicit referral strategies. Main outcome measures: General practitioner referral levels and thresholds for patients developing end-stage renal disease; referral routes (nephrologist vs other physicians); influence of patient age, marital status and comorbidity on referral. Results: Referral levels varied widely with the full range of cases (0-32; median = 15) referred by different doctors after consideration of first laboratory results. Less than half (44%) of cases were referred to a nephrologist. Patient age (40 vs 70 years), marital status, comorbidity (none vs rheumatoid arthritis) and general practitioner prior specialist renal training (yes or no) did not influence referral rates. Many patients were not referred to a specialist at creatinine levels of 129 $\mu\text{mol/l}$ (47% not referred) or 250 $\mu\text{mol/l}$ (45%). While all patients were referred at higher levels (350 and 480 $\mu\text{mol/l}$), referral to a nephrologist decreased in likelihood as scenarios became more complex; 28% at 129 $\mu\text{mol/l}$ creatinine; 28% at 250 $\mu\text{mol/l}$; 18% at 350 $\mu\text{mol/l}$ and 14% at 480 $\mu\text{mol/l}$. Referral levels and routes were not influenced by general practitioner age, sex or practice location. Most general practitioners had little current contact with chronic renal patients (mean number in practice = 0.7, s.d. = 1.3). Conclusion: The very divergent management patterns identified highlight the need for guidance to general practitioners on appropriate management of this serious condition. © 2006 Montgomery et al; licensee BioMed Central Ltd.

7. Montgomery AJ, Panagopolou E, Benos A. Work-family interference as a mediator between job demands and job burnout among doctors. *Stress and Health*. 2006 //;22(3):203-12.

There is an increasing realization that the connections between work and family life are of critical importance in contemporary society. The present study examined the relationship between job demands and burnout, and the mediational role of work-family interference (WFI) in a sample of Greek doctors (N = 162). The main findings are: (1) emotional job demands were found to be a strong independent predictor of both emotional exhaustion and depersonalization; (2) quantitative job demands were found to predict emotional exhaustion; (3) WFI was found to partially mediate the relationship between both quantitative/emotional job demands and emotional exhaustion; (4) additionally, WFI partially mediated the relationship between emotional job demands and depersonalization. The results and limitations are discussed with reference to the medical profession. Copyright © 2006 John Wiley & Sons, Ltd.

8. Montgomery AJ, Panagopolou E, de Wildt M, Meenks E. Work-family interference, emotional labor and burnout. *Journal of Managerial Psychology*. 2006 //;21(1):36-51.

Purpose - The purpose of the current study is to examine the relationship between emotional display rules/job focused labor, work-family interference (WFI) and burnout among a sample of workers in a Dutch governmental organization. Design/methodology/approach - The research is a cross-sectional study of 174 workers from a Dutch governmental organization. Findings - Emotional display rules and job-focused labor were related to burnout and psychosomatic complaints. More specifically, the need to hide negative emotions and engage in surface acting was related to negative outcomes. In addition, WFI partially mediated the relationship between the hiding of negative emotion/surface acting and burnout/ psychosomatic complaints. Research limitations/implications - The present study is cross-sectional and thus the postulated relationships cannot be interpreted causally. Practical implications - In terms of training and/or interventions, there is a need for the worksite to provide structured opportunities for employees to decompress from the emotional demanding aspects of their jobs. Originality/value - Emotional labor has been rarely examined as an antecedent of WFI. In addition, while emotional labor has been studied with individuals in the service sector, it has been rarely examined among individuals whose jobs are highly ceremonial in nature. © Emerald Group Publishing Limited.

9. Otoom S, Bakhiet M, Khan A, Sequeira R. Prolonged use of phenytoin, carbamazepine or valproate monotherapy on plasma levels of folate and B12: A comparison between epileptic patients with or without cardiovascular disorders. *Neuroendocrinology Letters*. 2006 //;27(1-2):85-8.

Purpose: Previous studies showed an association between blood levels of folate and vitamin B12 and the risk for cardiovascular disease. The aim of this study is to investigate the effect of chronic use of phenytoin, carbamazepine or valproate monotherapy on the plasma levels of folate and B12, and to compare folate and B12 levels in epileptic patients with or without cardiovascular disorders. Methods: The study was conducted in the outpatient neurology clinic at Bahrain Defence Force (BDF) Hospital between January-July, 2005. Medical information was obtained by interviewing the patients and examining their hospital records. Blood folate and vitamin B12 were measured by Immulite immunoanalysis assay using chemoluminescence. Results: A total of 26 consecutive outpatients (17 males, 9 females) were recruited in the study. Their mean age \pm SD was 38.2 ± 20.1 year (range 15-77 year). Five (19.2%) had complex partial epilepsy and the remainder had tonic-clonic seizures. They had epilepsy for 15.7 ± 8.1 years (range 2-35 years). Thirteen of them used phenytoin, nine carbamazepine and four used valproate. The duration of the treatment (years), dose (mg/day) and serum concentration ($\mu\text{mol/l}$) were 18.3 ± 10.6 , 376.9 ± 180.4 , 41.6 ± 25.6 , for phenytoin, 14.5 ± 11.7 , 422.2 ± 175.0 , 31.1 ± 15.9 for carbamazepine and 18.3 ± 6.3 , $400,567.7 \pm 78.1$ for valproate, respectively. Eleven (42.3%) had established cardiovascular disorders such as hypertension, myocardial infarction or stroke. The mean level of plasma folate (12.94 ± 6.76 ng/ml) and B12 (484.94 ± 191.25 pg/ml) in epileptic patients with cardiovascular disorders compared to their values (11.27 ± 5.84), (514.49 ± 225.31) respectively in epileptics with no cardiovascular disorders were not statistically significant in the two groups. Conclusion: In epileptic patients on chronic therapy with phenytoin, carbamazepine or valproate folate and B12 levels were not different in patients with or without cardiovascular disorder. © Neuroendocrinology Letters.

10. Otoom SA, Al-Safi SA, Kerem ZK, Alkofahi A. The use of medicinal herbs by diabetic Jordanian patients. Journal of Herbal Pharmacotherapy. 2006 //;6(2):31-41.

Diabetes mellitus is the most common metabolic disorder worldwide. To date, there have been no reports on the frequency of use of herb medicines in the managements of diabetes mellitus in Jordan. This cross-sectional study was conducted by interviewing 310 diabetic patients visiting two medical centers in Jordan: Jordan University of Science & Technology Medical Center and Sarih Medical Center between December 2003 and August 2004. It is found that 31% of interviewed patients have used herbal products (96 patients). The results revealed that the most commonly used herbs by diabetic patients in Jordan were *Trigonella foenumgraecum* (22.9%), *Lupinus albus* (14.6%), *Allium sativum* (11.5%), *Allium cepa* (5.2%), *Nigella sativa* (7.3%), *Zea mays* L. (6.3%), *Urtica dioica* L. (8.3%), *Eucalyptus globules* LA (9.4%), *Olea europea* L. (3.1%), *Cumminum cyminum* (9.4%), *Coriandrum sativum* (10.4%), *Salvia officinalis* L. (3.1%), and *Tilia cordata* (1%). Furthermore, it is found that 47.9% of the patients used herbs according to advice from their friends on a daily basis. The side effects were reported by 36.5% of the patients and include headache, nausea, dizziness, itching, palpitation, and sweating. Among the patients, 72.9% used the herbs as adjunctive therapy along with their anti-diabetic drugs and 80.2% of the patients informed their physicians about their use. A 79.2% of the sample confirmed their intention to re-use these herbs as 86.5% of them were satisfied with their diabetes control. There was a significant relationship between the use of herbs, the patient's place of residence and his/her level of education. The main conclusion of this survey is that the use of medicinal herbs among diabetic patient in Jordan is common. Therefore, it is essential to increase the level of awareness among diabetic patients and health care providers regarding the efficacy and toxicity of these medicinal herbs. Copyright © by The Haworth Press, Inc. All rights reserved.

11. Otoom SA, Al-Safi SA, Sequeira RP, Alkofahi AS. Knowledge of management of epilepsy in young adults in Jordan. Epilepsy and Behavior. 2006 //;9(2):349-54.

Purpose: Nationwide studies on public knowledge of epilepsy have been undertaken in several countries, but not in Jordan. The purpose of this study was to evaluate knowledge of the management of epilepsy in Jordan. Methods: A cross-sectional study was performed during the period February-June 2005 on 16,044 individuals selected randomly to represent all regions of Jordan. Respondents were interviewed and asked to complete a five-item questionnaire testing their knowledge of the management of epilepsy. Results: Most of the individuals (77.9%) agreed that patients with epilepsy are best treated in a specialized hospital for neurological diseases. Although the largest percentage of the sample (86.7%) agreed that the best person to treat epilepsy is a neurologist, others believed that a hypnotherapist (25.4%) or a religious healer (22.6%) is. As an immediate measure during an attack of epilepsy, most respondents (82.6%) agreed that protecting the patient's head is most important. During the postseizure period, 45.8% of respondents believed that offering the patient water or a cold or hot drink is appropriate. Two-thirds of the respondents (66.2%) agreed that epilepsy can be treated with drugs. Responses of the participants to the five items significantly differed with respect to age, gender, level of education, and occupation. Conclusion: Jordanians are reasonably well informed about most aspects of the management of epilepsy, but there is still a need for public education about this disorder. © 2006 Elsevier Inc. All rights reserved.

12. Otoom SA, Handu SS, Wazir JF, James H, Sharma PR, Hasan ZA, et al. Veratridine-induced wet dog shake behaviour and apoptosis in rat hippocampus. Basic and Clinical Pharmacology and Toxicology. 2006 //;98(4):423-6.

We have previously evaluated veratridine as an in vitro model of seizure using conventional electrophysiological recordings in rat hippocampal CA1 pyramidal neurones. The aim of this investigation is to further characterize this convulsant as an in vivo model of seizure. Veratridine was administered intraperitoneally to male Fisher rats in a dose range of 100-400 µg/kg. Within 5 min. after the injections, the animals entered a quiescent period which was followed 10-15 min. later by facial automatism (washing), grooming, masticatory jaw movement and profuse salivation. This phenomenon was followed by the development of wet dog shake and forelimb clonus. The time (mean±S.E.M.) for the onset of induction of these shakes for all tested doses was 31.65±2.85 min. and the number of shakes (mean±S.E.M.) 30 min. after the onset was 17.2±2.85. The onset and number of wet dog shakes induced by veratridine was dose-dependent. No rat death was recorded until 2 weeks after the experiments. Histopathological studies of animals 2 weeks after veratridine administration showed evidence of apoptosis in the hippocampus. Our results indicate that veratridine produced a behavioural pattern of a limbic seizure which mimics temporal lobe epilepsy in man. Based on our previous findings in vitro and of this investigation in vivo, veratridine can be used as an experimental tool to evaluate potential antiepileptic drugs effective against this type of limbic behaviour. © Basic & Clinical Pharmacology & Toxicology 2006.

13. Otoom SA, Sequeira RP. Health care providers' perceptions of the problems and causes of irrational use of drugs in two Middle East countries. *International Journal of Clinical Practice*. 2006 //;60(5):565-70.

It is now evident that both developed and developing countries are experiencing many aspects of inappropriate use of drugs in their health care facilities. This is the first study in the region performed to examine the most common problems of irrational use of drugs and their causes in two Middle East countries - Jordan and Syria. Ninety senior participants from Jordan (50-15 physicians and 35 pharmacists) and Syria (40-12 physicians and 28 pharmacists) were enrolled in this study. The participants were asked to fill two questionnaires that deal with the problems and causes of irrational use of drugs in their country. Additionally, the participants were asked to perform a prescription analysis using WHO prescribing indicators on 40 prescriptions taken randomly from a comprehensive health centre in their country. The main drug use problems identified in the two countries were almost the same, but they vary in the percentage of occurrence and include excessive use of antibiotics and antidiarrhoeals, overprescribing of nonsteroidal anti-inflammatory drugs, prescribing by tradename, excessive use of antibiotics to treat minor upper respiratory infections and self-medication by the public. The main causes of irrational use of drugs were poor medical records, lack of patient education about illnesses and drugs, no family doctor system, lack of standard treatment guidelines and lack of continuing medical education for doctors and pharmacists. The results of this study are important for decision-makers to utilise when putting policies and strategies to improve the use of drugs in both countries. © Blackwell Publishing Ltd, 2006.

14. Panagopoulou E, Maes S, Rimé B, Montgomery A. Social sharing of emotion in anticipation of cardiac surgery: Effects on preoperative distress. *Journal of Health Psychology*. 2006 //;11(5):809-20.

This study examined associations between social sharing of emotions, social support and preoperative psychological distress. Social sharing was operationalized in terms of quantity and quality. Quantity of social sharing was measured daily using a diary method. Quality of social sharing was measured with the Quality of Sharing Inventory. Participants were 157 hospitalized Greek patients. Hierarchical regression analysis showed that controlling for distress on admission, quality of social sharing was negatively related to distress one day before surgery ($p < .01$). No effects were found for quantity of social sharing. Results emphasize the importance of studying qualitative aspects of emotional disclosure. Copyright © 2006 SAGE Publications.

15. Panagopoulou E, Montgomery A, Benos A. Quality of life after coronary artery bypass grafting: evaluating the influence of preoperative physical and psychosocial functioning. *Journal of Psychosomatic Research*. 2006 //;60(6):639-44.

Objective: The aim of this study was to determine the influence of preoperative physical and psychosocial functioning on quality of life 1 and 6 months after coronary artery bypass grafting (CABG). Methodology: The study used a prospective design. A total of 157 patients admitted for elective CABG in a Greek city hospital participated in the study. Results: Results showed significant improvements in the quality of life of the patients after CABG [$F(2, 95)=36.337$; $P<.001$]. Structural equation modeling analyses showed that preoperative psychological distress was the only preoperative predictor of quality of life at 1 month ($\beta=-.22$; $P<.01$) and at 6 months ($\beta=-.28$; $P<.001$) after the operation. Conclusion: Results highlight preoperative distress as a screening criterion to identify patients likely to benefit less from cardiac surgery. © 2006.

16. Panagopoulou E, Montgomery A, Benos A. Burnout in internal medicine physicians: Differences between residents and specialists. *European Journal of Internal Medicine*. 2006 //;17(3):195-200.

Background: Burnout poses a substantial problem for physicians' well-being and for the quality of health care. The role of workload in comparison to subjective work characteristics has been rarely studied. The purpose of this study was to explore the associations of burnout with workload and subjective work characteristics in internal medicine specialists and residents. Methods: A cross-sectional study using an anonymous mailed survey was used. Some 103 specialists and 143 residents participated in the study. Burnout was measured using the Maslach Burnout Inventory. Subjective work characteristics included perceived job demands in terms of time pressure, mental effort and emotional labor. Workload was assessed in terms of average number of hours worked per week. Results: Emotional exhaustion in medical specialists was only predicted by perceived job demands [odds ratio 3.7 (CI 1.7-7.9), $P < 0.001$]. Emotional exhaustion in medical residents was only predicted by emotional labor [odds ratio 1.9 (CI 1.2-3.0), $P = 0.003$]. Depersonalization among medical specialists was only predicted by emotional labor [odds ratio 2.7 (CI 1.1-6.7), $P = 0.032$], while depersonalization among medical residents was only predicted by number of hours worked per week [odds ratio 1.1 (CI 1.1-1.2), $P = 0.007$]. Discussion: Perceived working conditions were more important than workload in explaining the variance in

burnout. In addition, burnout in medical specialists and residents was linked to different characteristics of their working environment. © 2006 European Federation of Internal Medicine.

17. Panagopoulou E, Montgomery AJ, Benos A, Maes S. Are people emotionally predisposed to experience lower quality of life? The impact of negative affectivity on quality of life in patients recovering from cardiac surgery. *Social Indicators Research*. 2006 //;76(1):55-69.

Negative affectivity has been defined as a predisposition to experience intense states of negative emotions. As a trait concept it is a dimension that reflects stable and pervasive differences in negative mood and self-concept. There has been systematic evidence linking negative affectivity to anxiety, depression, psychosomatic complaints, pain symptoms, and adherence to life style changes. Several studies have demonstrated a link between negative affectivity and quality of life. However, as the majority of these studies have been cross-sectional, it has been difficult to establish causal relations between quality of life and negative affect. The present study is a longitudinal investigation of negative affectivity and quality of life in patients undergoing coronary artery bypass grafting (N = 157). Negative affectivity and quality of life were assessed with the Positive and Negative Affect Schedule (PANAS) and with the MacNew Quality of Life after Myocardial Infarction Questionnaire (MacNew QLM) on admission day, one, and six months after the operation. Causal and reciprocal relationships were tested using a cross-lagged designs analysis via structural equation modeling. Results indicated that the causal model represented the best fit to the data. Results of the study are discussed in terms of the clinical importance of identifying patients at risk of experiencing severe restrictions in their quality of life. © Springer 2006.

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18. Carmody P, Whitford DL. Telephone survey of private patients' views on continuity of care and registration with general practice in Ireland. BMC Family Practice. 2007 //;8.

Background. The desire of patients for personal continuity of care with a General Practitioner (GP) has been well documented, but not within non-registered private patients in Ireland. This study set out to examine the attitudes and reported behaviours of private fee-paying patients towards continuity of GP care and universal registration for patients. **Methods.** Cross-sectional telephone survey of 400 randomly chosen fee-paying patients living within County Dublin. There is no formal system of registration with a GP for these patients. Main outcomes were attendance of respondents at primary health care facilities and their attitudes towards continuity of care and registration with a GP. Data was analysed using descriptive statistics and using parametric and non-parametric tests of association. Pearson correlation was used to quantify the association between the described variables and attitudes towards continuity and registration with a GP. Variables showing significance at the 5% level were entered into multiple linear regression models. **Results.** 97% of respondents had seen a GP in the previous 5 years. The mean number of visits to the GP for respondents was 2.3 per annum. 89% of respondents had a regular GP and the mean length of time with their GP was 15.6 years. 96% preferred their personal medical care to be provided within one general practice. 16% of respondents had consulted a GP outside of their own practice in the previous year. They were more likely to be female, commute a longer distance to work or have poorer health status. 81% considered it important to be officially registered with a GP practice of their choice. **Conclusion.** Both personal and longitudinal continuity of care with a GP are important to private patients. Respondents who chose to visit GPs other than their regular GP were not easily characterised in this study and individual circumstances may lead to this behaviour. There is strong support for a system of universal patient registration within general practice. © 2007 Carmody and Whitford; licensee BioMed Central Ltd.

19. Clarke M, Whitford DL, O'Reilly F. 'Breaking up is hard to do': Perspectives of general practitioners and patients towards removals from GP lists. Irish Journal of Medical Science. 2007 //;176(3):221-4.

Background: The numbers of removals of patients from General Practitioner lists in Ireland is increasing and is a cause for some concern. **Aims:** To examine the views of both general practitioners and patients toward removals of patients from general practitioner lists. **Methods:** Questionnaire survey to general practitioners in North Inner City Dublin who had removed patients from their list over a 1-year period (n = 45) and to the patients they had removed (n = 86). Follow up semi structured interviews were carried out with five general practitioners and ten patients. **Results:** For doctors, the decision to remove a problematic patient from their list is generally a positive experience, providing relief and being associated with certainty in both the decision and the process. For the patient, being removed from a GP's list is a negative experience, stressful and confusing. **Conclusions:** There is a need for the development of a clear responsive, transparent and supportive system for removing patients from a GP list. © Royal Academy of Medicine in Ireland 2007.

20. Daoud A, Al-Safi S, Ootom S, Wahba L, Alkofahi A. Public knowledge and attitudes towards epilepsy in Jordan. Seizure. 2007 //;16(6):521-6.

Background: Social acceptances of people with epilepsy very often constitute a considerable problem for patients and their family. Nationwide opinion polls on the public knowledge and attitudes towards epilepsy have been reported from several countries. The purpose of this study is to assess the knowledge and attitudes of the Jordanian public towards epilepsy, which have not been verified before. **Methods:** A total of 16,044 people (8158 males and 7886 females) living in different areas of Jordan were interviewed by invitation using standard four set questionnaire constructed from previous similar studies (Caveness and Gallup) that tested public knowledge and attitudes toward epilepsy. Two hundred and thirty senior students of the faculty of pharmacy at Jordan University of Science and Technology are involved in this study. Each student interviewed at least 50 individuals, aged 18 years or older, from their immediate community including family members, relatives, neighbors and friends by invitation. The interviews took place during the period from February to June of 2005. **Results:** Eighty-eight percent had read or knew about epilepsy, and 52.4% had witnessed an epileptic attack at least once in their life. From the people interviewed, 84.7% believed that the cause of epilepsy is a neurological disease, and 80.6% believe that the main symptom is brief loss of consciousness. The response of the younger participants and those with higher education were statistically significant more positive regarding the knowledge on causes and symptoms of epilepsy. More than 70% accepts shaking hands with people with epilepsy; they also believe that people with epilepsy are able to have children and to get high academic degrees. Less than 50% accepts letting their children play with children with epilepsy or employ people with epilepsy. Nine percent had negative attitudes, and believed that patients with epilepsy are insane and 88.5% objects the marriage of people with epilepsy to their sons or daughters. Approximately one third of the respondents believed that epilepsy is more dangerous than diabetes mellitus and hypertension. **Conclusions:** The overall knowledge and attitudes of

Jordanians towards epilepsy is relatively comparable with the results from Asian countries but more negative when compared with reports from the Western countries. Consequently, well-organized educational campaigns are needed to improve public perception about epilepsy. © 2007 British Epilepsy Association.

21. McClean B, Grey IM, McCracken M. An evaluation of positive behavioural support for people with very severe challenging behaviours in community-based settings. Journal of Intellectual Disabilities. 2007 //;11(3):281-301.

This study employs a multiple baseline across individual design to describe positive behaviour support for five people in community settings. The individuals represent all people with intellectual disability residing in one county with long-standing challenging behaviour resulting in serious physical injury. Five types of outcome are presented: rates of behaviour, rates of medication, psychiatric symptomatology, quality of life and revenue costs. The systems of support required to maintain outcomes and develop real lifestyles include behaviour support planning, mental health review, on-call intensive support and emergency respite care. Behaviours reduced to near-zero levels following implementation of positive behaviour support and improvements were sustained over 24 months. The use of psychotropic medications reduced by 66 percent over the same period. Quality of Life Questionnaire scores improved significantly for three of the five participants. The results are discussed in the context of a framework for supporting people with severe challenging behaviours in the community. © 2007 Sage Publications.

22. O'Farrell PA, Joshua-Tor L. Mutagenesis and crystallographic studies of the catalytic residues of the papain family protease bleomycin hydrolase: New insights into active-site structure. Biochemical Journal. 2007 //;401(2):421-8.

Bleomycin hydrolase (BH) is a hexameric papain family cysteine protease which is involved in preparing peptides for antigen presentation and has been implicated in tumour cell resistance to bleomycin chemotherapy. Structures of active-site mutants of yeast BH yielded unexpected results. Replacement of the active-site asparagine with alanine, valine or leucine results in the destabilization of the histidine side chain, demonstrating unambiguously the role of the asparagine residue in correctly positioning the histidine for catalysis. Replacement of the histidine with alanine or leucine destabilizes the asparagine position, indicating a delicate arrangement of the active-site residues. In all of the mutants, the C-terminus of the protein, which lies in the active site, protrudes further into the active site. All mutants were compromised in their catalytic activity. The structures also revealed the importance of a tightly bound water molecule which stabilizes a loop near the active site and which is conserved throughout the papain family. It is displaced in a number of the mutants, causing destabilization of this loop and a nearby loop, resulting in a large movement of the active-site cysteine. The results imply that this water molecule plays a key structural role in this family of enzymes. © 2007 Biochemical Society.

23. Otoom S, Al-Jishi A, Montgomery A, Ghwanmeh M, Atoum A. Death anxiety in patients with epilepsy. Seizure. 2007 //;16(2):142-6.

Purpose: Whereas the relationship between epilepsy and anxiety has received much attention, less is known about the relationship between death anxiety and this disorder. The objective of this study was to assess death anxiety among epileptic patients who attended the outpatient neurology clinic at the Salmaniya Medical Complex, Kingdom of Bahrain. Methods: Ninety-two patients (48 males and 44 females) completed a death anxiety scale. The scale items were adopted from already published surveys and adjusted to suit epilepsy patients. Results: Results showed that the mean death anxiety score was moderate (2.75 ± 1.35), with 26.09% of patients reporting high levels of death anxiety. Period of illness and educational level were significant predictors of death anxiety. Female patients, generalized type of epilepsy, the short duration of the illness and low level of education were associated with higher death anxiety scores. Conclusion: This study highlights the need for developing treatment strategies, counseling therapies and social support for people with epilepsy to decrease their death anxiety and improve their quality of life. © 2006 British Epilepsy Association.

24. Whitford DL. Prevention of type 2 diabetes - Why are we not doing more? Journal of the Bahrain Medical Society. 2007 //;19(3):93-4.

Type 2 diabetes is a highly morbid condition and an increasing problem worldwide. There have been encouraging studies of both lifestyle and drug interventions that have indicated that type 2 diabetes can be delayed or prevented. At present, it is still debatable whether the lifestyle interventions can be implemented in routine clinical practice and if they are cost-effective. Further studies in routine clinical practice are needed to show this. In the meantime the emphasis on developing structured care and cardiovascular risk reduction for people identified with pre-diabetes and diabetes should be maintained.

25. Whitford DL, Chan WS. A randomised controlled trial of a lengthened and multi-disciplinary consultation model in a socially deprived community: A study protocol. BMC Family Practice. 2007 //;8.

Background. There has been little development of the general practice consultation over the years, and many aspects of the present consultation do not serve communities with multiple health and social problems well. Many of the problems presenting to general practitioners in socio-economically disadvantaged areas are not amenable to a purely medical solution, and would particularly benefit from a multidisciplinary approach. Socio-economic deprivation is also associated with those very factors (more psychosocial problems, greater need for health promotion, more chronic diseases, more need for patient enablement) that longer consultations have been shown to address. This paper describes our study protocol, which aims to evaluate whether a lengthened multidisciplinary primary care team consultation with families in a socially deprived area can improve the psychological health of mothers in the families. Methods/Design. In a randomised controlled trial, families with a history of social problems, substance misuse or depression are randomly allocated to an intervention or control group. The study is based in three general practices in a highly deprived area of North Dublin. Primary health care teams will be trained in conducting a multidisciplinary lengthened consultation. Families in the intervention group will participate in the new style multidisciplinary consultation. Outcomes of families receiving the intervention will be compared to the control group who will receive only usual general practitioner care. The primary outcome is the psychological health of mothers of the families and secondary outcomes include general health status, quality of life measures and health service usage. Discussion. The main aim of this study is to evaluate the effectiveness of a lengthened multidisciplinary team consultation in primary care. The embedded nature of this study in general practices in a highly deprived area ensures generalisability to other deprived communities, but more particularly it promises relevance to primary care. Trial registration. Current Controlled Trials ISRCTN70578736. © 2007 Whitford and Chan; licensee BioMed Central Ltd.

RCSI Bahrain Publications 2008 with abstracts

26. Al-Muharraqi MA, Lynch C, O'Sullivan R. Medical quiz. Bahrain Medical Bulletin. 2008 //;30(4):173+91-93.

27. Darwish A, Nagaraj V, Amin E. Congenital seminal vesicle cyst in a 3 year old boy: A case report. Journal of the Bahrain Medical Society. 2008 //;20(4):180-2.

Cysts of the seminal vesicle, although rare, are well recognized clinical entities which are now seen with increasing frequency with modern pelvic imaging modalities. These cysts may be unilateral or bilateral; congenital or acquired. Seminal vesicle cysts may arise from inflammation of the seminal vesicle or from embryological remnants such as Mullarian duct. Surgical removal has been the treatment of choice either by an abdominal or laparoscopic approach. Here we present a case of seminal vesicle cyst of congenital type in a 3 year old boy, who also had a non-functioning left pelvic ectopic kidney.

28. Henari FZ. Optical nonlinearity in hydrogenated amorphous silicon-selenium film. Optics Communications. 2008 //;281(23):5894-7.

The nonlinear absorption and nonlinear refractive index of hydrogenated amorphous silicon-selenium (a-Si_{1-x}Se_x:H) film prepared by a plasma-enhanced chemical deposition process was measured using a z-scan technique. Intensity dependent transmission was observed and attributed to reverse saturation absorption (optical limiting). The thermal contribution to nonlinear refractive index is discussed. The nonlinear response time was measured by using the pump and probe technique. Reverse saturating absorption was utilized to demonstrate all optical switching. © 2008 Elsevier B.V. All rights reserved.

29. Henari FZ, Ali-Mohamed AY. Nonlinear refractive index measurement of tris(acetylacetonato)manganese(III) solution. Optics and Laser Technology. 2008 //;40(4):602-6.

We present the results from investigations of the nonlinear refractive index and nonlinear absorption coefficient of tris(acetylacetonato)manganese(III) solution, using Z-scan technique with a low-power continuous-wave laser at 514 nm. We demonstrate that the light-induced nonlinear refractive index variation leads to strong self-focusing and self-defocusing. A pump and probe technique was used to investigate the cause of nonlinearity. Furthermore, the nonlinear absorption effect was utilized to demonstrate all optical switching. © 2007 Elsevier Ltd. All rights reserved.

30. Henari FZ, Dakhel AA. Linear and nonlinear optical properties of hydrogenated CdO thin films. Laser Physics. 2008 //;18(12):1557-61.

The linear and nonlinear optical properties of a CdO film post-annealed in a hydrogen atmosphere for 30 min (CdO:H) were studied. The prepared CdO and CdO:H films were characterized by X-ray diffraction and UV-VIS-NIR absorption spectroscopy. Experimental data indicated that annealing in an H₂ atmosphere slightly compresses the CdO unit cell and widens the energy gap of CdO by about 3% relative to a nonhydrogenated film. This effect can be explained by the Burstein-Moss energy effect. The nonlinear absorption and nonlinear refractive index coefficients were determined and found to be higher than the values previously determined for nonhydrogenated CdO. © 2008 Pleiades Publishing, Ltd.

31. Henari FZ, Dakhel AA. Linear and nonlinear optical properties of gold nanoparticle-Eu oxide composite thin films. Journal of Applied Physics. 2008 //;104(3).

In this work, nanogold particles incorporated onto europium oxide films at levels of 4% and 7% were fabricated by a vacuum evaporation technique on glass and silicon substrates held at 200 °C. Samples were investigated by x-ray diffraction and linear and nonlinear optical absorption. The linear optical absorption data were measured in the UV-visible-near infrared spectral regions and from these data the energy gap and the surface plasmon resonance were determined. The third order nonlinear optical properties of the nanogold particles incorporated onto europium oxide films were measured using the Z-scan technique. Nonlinear absorption and refraction were performed using a continuous wave laser at 633 nm. A large value of third order nonlinearities was obtained with the samples. © 2008 American Institute of Physics.

32. Lindsay Waters A. An ethnography of a children's renal unit: Experiences of children and young people with long-term renal illness. Journal of Clinical Nursing. 2008 //;17(23):3103-14.

Aim. This study explored the experience of long-term renal illness, including issues concerning compliance with treatment, from the perspectives of children and young people. **Background.** Children and young people have difficulty complying with renal treatment; research in this area usually focuses on their compliance with a narrow range of behaviours: compliance with dialysis, tablet taking and dietary and fluid restrictions. Renal compliance studies are usually premised on the assumption that children will automatically comply with treatment and/or that blame for non-compliance rests with the child and family. **Design.** The study, underpinned by a view of children as competent social agents, used ethnography to explore and describe the everyday experience of long-term renal illness. **Method.** Ethnographic fieldwork - involving participant observation, informal interviews and the use of children's drawings - took place over 16 months in a hospital renal unit comprising an inpatient ward, a haemodialysis unit and an outpatient clinic. The primary participants were 13 children; 14 carers and 36 staff members also participated. Data were interrogated through descriptive and thematic forms of analysis. **Results.** This study reveals participants' perspectives on the physical and social impact of renal treatment. It also provides a conceptualisation of life with long-term renal illness that highlights children's management of 'illness labour', their inhabitation 'renal geographical space', 'a renal body' and a 'renal social world'. **Conclusions.** These findings show how compliance with renal treatment involves particular embodied experiences that are hard for children to manage. Traditional views of compliance/non-compliance render children's embodied experience and their labour in managing dialysis, thirst and their difficulties with tablet taking irrelevant, whilst this study shows these as highly relevant to children. **Relevance to clinical practice.** The conceptualisation of children's experience arising in this study provides a new way of considering the embodied experience of children with long-term renal illness. © 2008 Blackwell Publishing Ltd.

RCSI Bahrain Publications 2009 with abstracts

33. Glynn LG, O'Riordan C, MacFarlane A, Newell J, Iglesias AA, Whitford D, et al. Research activity and capacity in primary healthcare: The REACH study: A survey. BMC Family Practice. 2009 //;10.

Background. Despite increased investment in primary care research and development (R&D), the level of engagement of primary healthcare professionals with research remains poor. The aim of this study is to assess the level of research activity and capacity for research among primary healthcare professionals in a health authority of over one million people in a mixed urban/rural setting in the West of Ireland. Methods. A questionnaire, incorporating the R+D Culture Index, was sent to primary healthcare professionals in the HSE Western Region. Baseline characteristics were analysed with the use of one-way ANOVA and Chi-square test and the dependence of R&D Culture Index score on all sixteen available covariates was examined using multiple regression and regression tree modelling. Results. There was a 54% response rate to the questionnaire. Primary healthcare professionals appeared to have an interest in and awareness of the importance of research in primary care but just 15% were found to be research active in this study. A more positive attitude towards an R&D culture was associated with having had previous research training, being currently involved in research and with not being a general practitioner (GP) ($p < 0.001$), but much variability in the R&D culture index score remained unexplained. Conclusion. Despite awareness of the importance of R&D in primary care and investment therein, primary healthcare professionals remain largely unengaged with the R&D process. This study highlights the issues that need to be addressed in order to encourage a shift towards a culture of R&D in primary care: lack of research training particularly in basic research skills and increased opportunities for research involvement. The use of the R&D Culture Index may enable groups to be identified that may be more research interested and can therefore be targeted in any future R&D strategy.

34. Jan MMS, Zuberi SA, Alsaihati BA. Pregabalin: Preliminary Experience in Intractable Childhood Epilepsy. Pediatric Neurology. 2009 //;40(5):347-50.

Pregabalin is a new antiepileptic drug that acts at presynaptic calcium channels, modulating neurotransmitter release. We report on treating consecutive children with severe drug-resistant epilepsy in a prospective, open-label, add-on trial. Nineteen children (63% male) aged 4-15 years (mean, 9.7; S.D., 2.9) were included. Most (74%) had daily seizures that failed multiple drugs (mean, 5). Epilepsy was symptomatic in 58%, and 74% exhibited associated cognitive deficits. Seizures were mixed in nine (47%), and four (21%) manifested Lennox-Gastaut syndrome. Pregabalin was maintained at 150-300 mg/day. On pregabalin, one (6%) child became seizure-free, and seven (37%) had >50% seizure reduction. The percentage of children with daily seizures was reduced from 74% before pregabalin to 37% afterward ($P < 0.002$). Side effects were evident in six (32%) with somnolence, weight gain, dizziness, or behavioral change. The drug was withdrawn in five (26%) children for lack of efficacy, and in two (11%) for worsening of myoclonic epilepsy. We conclude that pregabalin is a useful addition in the treatment of refractory childhood epilepsy. The drug should be used with caution in myoclonic epilepsy. Controlled studies are needed to establish long-term efficacy and tolerability. © 2009 Elsevier Inc. All rights reserved

35. Lynch CD, Ziada HM, Buckley LA, O'Sullivan VR, Aherne T, Aherne S. Prosthodontic rehabilitation of hypophosphatasia using dental implants: A review of the literature and two case reports. Journal of Oral Rehabilitation. 2009 //;36(6):462-8.

There are reports in the literature of the various dental features of hypophosphatasia, especially where it affects the deciduous dentition. The descriptions include both the manifestations of the disorder and the subsequent patterns of tooth loss. There are fewer descriptions of the effects of hypophosphatasia on the permanent dentition and little information on the subsequent prosthodontic management of these patients, particularly in relation to the use of dental implants. The aim of this paper was to review the literature on the dental effects of hypophosphatasia, present two cases and describe how one of those patients, a young adult, was successfully rehabilitated using dental implants. That latter patient's pattern of tooth loss as well as some histological and scanning electron microscopic findings of root cementum from the other case is also described. © 2009 Blackwell Publishing Ltd.

36. Whitford DL, Hickey A, Horgan F, O'Sullivan B, McGee H, O'Neill D. Is primary care a neglected piece of the jigsaw in ensuring optimal stroke care? Results of a national study. BMC Family Practice. 2009 //;10.

Stroke is a major cause of mortality and morbidity with potential for improved care and prevention through general practice. A national survey was undertaken to determine current resources and needs for optimal stroke prevention and care. Methods. Postal survey of random sample of general practitioners undertaken (N = 204;

46% response). Topics included practice organisation, primary prevention, acute management, secondary prevention, long-term care and rehabilitation. Results. Service organisation for both primary and secondary prevention was poor. Home management of acute stroke patients was used at some stage by 50% of responders, accounting for 7.3% of all stroke patients. Being in a structured cardiovascular management scheme, a training practice, a larger practice, or a practice employing a practice nurse were associated with structures and processes likely to support stroke prevention and care. Conclusion. General practices were not fulfilling their potential to provide stroke prevention and long-term management. Systems of structured stroke management in general practice are essential to comprehensive national programmes of stroke care.

37. Whitford DL, McGee H, O'Sullivan B. Reducing health risk in family members of patients with type 2 diabetes: Views of first degree relatives. BMC Public Health. 2009 //;9.

Background. Patients with type 2 diabetes can have an important role in discussing health risk within families. This study aimed to establish the acceptability to first degree relatives towards their relative with type 2 diabetes intervening as health promoters in their own families, using the Health Belief Model as a theoretical framework for evaluation. Methods. Cross-sectional questionnaire design. Survey questionnaire for first degree relative (sibling or child) mailed to a random sample of patients with type 2 diabetes registered with an urban hospital diabetes clinic (n = 607 eligible patients). Patients were asked to pass on questionnaires to one to two first degree relatives. Results. Questionnaires were returned from 257 families (42% response rate) with two responses provided by 107 families (a total of 364 questionnaires). The majority (94%) of first degree relatives of patients with type 2 diabetes would like to be informed about reducing their risk. Half (48%) of respondents reported being spoken to by a relative with type 2 diabetes about their risk of diabetes. Those spoken to were more likely to see themselves at risk of diabetes, to worry about developing diabetes and to view diabetes as a serious condition. Conclusions. A role for patients with type 2 diabetes in discussing health risk in their family appears to be acceptable to many relatives. Discussion of risk and interventions to reduce health risk with their relatives should be encouraged in patients with type 2 diabetes. © 2009 Whitford et al; licensee BioMed Central Ltd.

38. Whitford DL, McGee H, O'Sullivan B. Will people with type 2 diabetes speak to family members about health risk? Diabetes Care. 2009 //;32(2):251-3.

OBJECTIVE - This study aimed to assess the potential for communication of familial risk by patients with type 2 diabetes. RESEARCH DESIGN AND METHODS - A questionnaire was completed by a random sample of patients with type 2 diabetes registered with a hospital diabetes clinic. RESULTS - Two-thirds of patients (65%) had spoken to at least one sibling or child about diabetes risk. They were more likely to believe their family was at risk, to worry about their family developing diabetes, and to be aware of the seriousness of diabetes. The results revealed greater awareness of family risk of type 2 diabetes compared with those from previous studies. CONCLUSIONS - Many patients with type 2 diabetes had already taken the initiative, without formal prompting, to talk to family members about their risk of diabetes. Discussion of risk and interventions to reduce risk should be encouraged within families. © 2009 by the American Diabetes Association.

RCSI Bahrain Publications 2010 with abstracts

39. Bahiah AS, Murphy JF, Sharidan HE. Fetal distress in labor and caesarian section rate. Bahrain Medical Bulletin. 2010 //;32(2).

Objective: To estimate the relationship between fetal distress in labor and the rate of Caesarian section. Design: Retrospective study. Setting: Obstetrics and Gynecology Department at Bahrain Defense Force Hospital. Method: Emergency Caesarian sections due to fetal distress (235) performed between the 1st January 2008 to 30th June 2009 were reviewed. The major indications and the immediate causes for Caesarian section were identified. We assessed the baby outcomes by the measurement of Apgar score, neonatal intensive care admission and the need for intubation. Result: Two hundred thirty-five emergency caesarian section were performed out of one thousand two hundred and forty five (1245) mothers were delivered by caesarian section. Total deliveries in the same period was 5945; The caesarian section rate was 21%. The two main indications for Caesarian sections were: previous Caesarian section 337 (27%) followed by fetal distress 235 (19%), out of which 51 were performed prior to labor and 184 in labor. Indicators of fetal distress, in labor was as follows: 22 (12%) mothers had thick meconium, non reactive CTG in 9 (5%) mothers, fetal heart deceleration in 1 (0.54%), abruptio placenta in labor in 11 (6%), and other abnormal CTG findings not classified in 141 patients (77%). Hundred and nineteen (50.6%) were primigravida out of 235 mothers delivered by Caesarian section due to fetal distress, of which 97 mothers were in labor. Seven of 186 neonates (3.8%) had a low Apgar score (Apgar score <7 at 5 minutes). Of these 7 neonates, one required intubation and was admitted to the neonatal intensive care unit. Conclusion: The Caesarian section rate in Bahrain Defense Force Hospital was high. The main reason for Caesarian sections was previous Caesarian section followed by fetal distress. The use of an objective assessment of fetal hypoxia would have lowered the rate of Caesarian delivery.

40. Doody MA, Hastings RP, O'Neill S, Grey IM. Sibling relationships in adults who have siblings with or without intellectual disabilities. Research in Developmental Disabilities. 2010 //;31(1):224-31.

There is relatively little research on the relationships between adults with intellectual disability and their siblings, despite the potential importance of these relationships for either individual's psychological well-being and future care roles that might be adopted by adult siblings. In the present study, sibling relationships of adults with adult siblings with (N = 63) and without (N = 123) intellectual disability were explored. Contact, warmth, conflict, and rivalry were measured using questionnaires available as an on-line survey. Expressed emotion was measured using the Five Minute Speech Sample over the telephone to establish an independently coded measure of criticism from the participant towards their sibling. Overall, there were few group differences in contact and sibling relationship. There was less telephone contact in the intellectual disability group, and less reported warmth in the relationship with siblings with intellectual disability although this was mainly associated with severe/profound intellectual disability. Exploratory analyses were conducted of the correlates of sibling relationships in both the intellectual disability and control groups. These analyses revealed a small number of different associations especially for conflict, which was lower when either the participant or sibling was younger in the control group but associated with relative age in the intellectual disability group. © 2009 Elsevier Ltd. All rights reserved.

41. Garadah TS, Kassab S, Mahdi N, Abu-Taleb A, Jamsheer A. Pulsed and tissue Doppler echocardiographic changes in patients with Thalassemia major. Clinical Medicine Insights: Blood Disorders. 2010 //;3:1-8.

Background: Doppler echocardiographic studies of left ventricle (LV) systolic and diastolic function in patients with β -Thalassemia Major (β -TM) had shown different patterns of systolic and diastolic dysfunction. Aim: This cross-sectional study was designed to study the LV systolic and diastolic function in patients with β -TM using Pulsed Doppler (PD) and Tissue Doppler (TD) echocardiography. Methods: All patients were evaluated clinically and by echocardiography, The study included patients with β -TM (n = 38, age 15.7 ± 8.9 years) compared with an age-matched control group (n = 38, age 15.9 ± 8.9 years). The pulse Doppler indices were normalized for age and heart rate. Results: Compared with control patients, M-Mode showed that patients with β -TM have thicker LV septal wall index (0.659 ± 0.23 vs. 0.446 ± 0.219 cm, $P < 0.001$), posterior wall index (0.659 ± 0.235 vs. 0.437 ± 0.214 cm, $P < 0.01$), and larger LVEDD index is (3.99 ± 0.48 vs. 2.170 ± 0.57 mm. $P = 0.035$). Pulsed Doppler showed high LV trans-mitral E wave velocity (70.818 ± 10.139 vs. 57.532 ± 10.139 , $p = 0.027$) and E/A ratio (1.54 vs. 1.23 , $P < 0.01$). The duration of Deceleration time (DT) and isovolumic relaxation time (IVRT) were significantly shorter in patients with β -TM (150.234 ± 20.023 vs. 167.123 ± 19.143 msec, $P < 0.01$) and (60.647 ± 6.77 vs. 75.474 ± 5.83 msec, $P < 0.001$), respectively. The ratio of transmitral E wave velocity to the tissue Doppler E wave at the basal septal mitral annulus E/Em- was significantly higher in β -TM group (14.024 ± 2.29 vs. 12.132 ± 1.82 , $P < 0.01$). The Tissue Doppler systolic velocity (Sm) and the early diastolic velocity (Em) were significantly lower in β -TM group compared to control (4.31 ± 1.2 cm/s vs. 6.95 ± 2.1 , $P < 0.01$ and 4.31 ± 2.7 cm/s vs. 5.82 ± 2.5 , $P < 0.01$) respectively. The tricuspid valve velocity was significantly higher than controls (2.993 ± 0.569 vs. 1.93 ± 0.471 m/sec, respectively, $P < 0.01$). However, the LVEF% and fractional shortening

were normal with no significant difference in both groups. Conclusion: In this study, patients with β -thalassemia major compared with controls, have significantly thicker LV wall, and larger LV cavity and LV diastolic filling indices suggestive of restrictive pattern with a higher tricuspid valve velocity. These data showed that left ventricle diastolic indices are compromised initially in patients with β -thalassemia major. © the authors.

42. Garadah TS, Kassab S, Mahdi N, Abu-Taleb A, Jamsheer A. QTc interval and QT dispersion in patients with Thalassemia major: Electrocardiographic (EKG) and echocardiographic evaluation. Clinical Medicine Insights: Cardiology. 2010 //;4:31-7.

Background: Doppler echocardiographic studies in patients with β -Thalassemia Major (β -TM) had shown different patterns of left ventricle (LV) systolic and diastolic dysfunctions. Aim: This cross-sectional study was designed to study the LV systolic and diastolic function in patients with β -TM using Pulsed Doppler (PD) Echocardiogram and assess the QTc interval and QT dispersion (QTd) on 12 leads ECG. Method: All patients were evaluated clinically as well as by echocardiography and 12 leads ECG. The study included patients with β -TM (n = 38, age 15.7 \pm 8.9 years), compared with an age-matched healthy control group (n = 38, age 15.9 \pm 8.9 years). Results: In 38 patients with β -TM Compared with healthy control group, The QTc interval and the QTd dispersion on ECG were increased with no significant difference mode echo showed that β -TM patients have thicker LV septal wall index (0.659 \pm 0.23 vs. 0.446 \pm 0.219 cm/M2, P < 0.001), posterior wall index (0.659 \pm 0.235 vs. 0.437 \pm 0.214 cm/M2, P < 0.01), and larger LVEDD index is (3.99 \pm 0.48 vs. 2.170 \pm 0.57 cm/M2. P < 0.05). Pulsed Doppler showed high LV trans-mitral E wave velocity index (70.818 \pm 10.139 vs. 57.532 \pm 10.139, P < 0.05) and E/A ratio (1.54 vs. 1.23, P < 0.01). The duration of deceleration time index (DT) and isovolumic relaxation time index (IVRT) were significantly shorter in patients with β -TM (150.234 \pm 20.023 vs. 167.123 \pm 167.123 \pm 19.143 msec/ M2, P < 0.01) and (60.647 \pm 6.77 vs. 75.474 \pm 5.83 msec/M2, P < 0.001), respectively. The tricuspid valve velocity in patients with β -TM was significantly higher than controls (2.993 \pm 0.569 vs. 1.93 \pm 0.471 m/sec, respectively, P < 0.01), with calculated pulmonary artery pressure of 2.4 times the control (36.0 vs. 14.8 mmHg). However, the LVEF% or fractional shortening were not significantly different. Conclusion: In this study, β -thalassemia major patients compared with controls have differences of QT dispersion and corrected QT interval that is of no statistical significance. A significantly thicker LV wall and LV diastolic filling indices are suggestive of restrictive diastolic pattern. These data indicate that LV diastolic abnormalities compromised initially in patients with β -thalassemia major. © the authors.

43. Garadah TS, Mahdi N, Kassab S, Shoroqi IA, Abu-Taleb A, Jamsheer A. The pro-BNP serum level and echocardiographic tissue doppler abnormalities in patients with beta Thalassemia Major. Clinical Medicine Insights: Cardiology. 2010 //;4:135-41.

Background: Doppler echocardiographic studies of the left ventricle (LV) function in patients with β -Thalassemia Major (β -TM) had shown different patterns of systolic and diastolic dysfunctions associated with abnormal serum brain natriuretic peptide (BNP). Aim: This cross-sectional study was designed to study the LV systolic and diastolic functions and correlate that with serum level of N-terminal pro brain natriuretic hormone (NT-pro BNP) in patients with β -TM using Pulsed Doppler (PD) and Tissue Doppler (TD) echocardiography. Methods: The study was conducted on patients with β -TM (n = 38, age 15.7 \pm 8.9 years) and compared with an age-matched controls (n = 38, age 15.9 \pm 8.9 years). In all participants, PD and TD echocardiography were performed and blood samples were withdrawn for measuring the serum level of NT-pro BNP, ferritin, and alanine transaminase. Results: Patients with β -TM compared with controls, have thicker LV septal wall index (0.65 \pm 0.26 vs. 0.44 \pm 0.21 cm, P < 0.001), posterior wall index (0.65 \pm 0.23 vs. 0.43 \pm 0.21 cm, P < 0.01), and larger LVEDD index (4.35 \pm 0.69 vs. 3.88 \pm 0.153 mm, P < 0.001). In addition, β -TM patients have higher transmitral E wave velocity (E) (70.818 \pm 10.139 vs. 57.532 \pm 10.139, p = 0.027) and E/A ratio (1.54 \pm 0.17 vs. 1.23 \pm 0.19, P < 0.01) and shorter deceleration time (DT) (160.13 \pm 13.3 vs. 170.50 \pm 19.20 m sec, P < 0.01). Furthermore, the ratio of transmitral E wave velocity to the tissue Doppler E wave at the basal septal mitral annulus (E/Em-) was significantly higher in β -TM group (19.6 \pm 2.81 vs. 13.868 \pm 1.41, P < 0.05). The tissue doppler systolic wave (Sm) velocity and the early diastolic wave (Em) were significantly lower in β -TM group compared to controls (Sm: 4.82 \pm 1.2 vs. 6.22 \pm 2.1 mm/sec, P < 0.05; Em: 3.51 \pm 2.7 vs. 4.12 \pm 2.5 mm/sec P < 0.05, respectively). The tricuspid valve velocity was significantly higher in β -TM patients compared with controls (2.993 \pm 0.569 vs. 1.93 \pm 0.471 m/sec, respectively, P < 0.01). The mean serum NT-pro-BNP in β -TM was significantly higher compared with controls (37.6 \pm 14.73 vs. 5.5 \pm 5.4pg/ml, P < 0.05). The left ventricle ejection fraction (EF%) and fractional shortening (FS%) were not significantly different between both groups. Conclusion: We conclude that patients with β -TM had a significantly higher serum level of NT-pro BNP that is positively correlated with the E/Em ratio on tissue Doppler. Furthermore, we confirm our previous findings that patients with β -TM exhibit LV diastolic pattern on echocardiogram suggestive of restrictive type with well preserved left ventricle systolic function. © the author(s), publisher and licensee Libertas Academica Ltd.

44. Grey I, Bradley S, McClean B. Patterns of autism diagnostic assessment in Ireland. Irish Journal of Psychology. 2010 //;31(1-2):27-42.

A retrospective analysis was carried out on the diagnostic assessments of 67 children with an Autism Spectrum Disorder (ASD), in order to (1) examine the use of assessment instruments used to diagnose autism and whether they reflect the critical domain areas requiring assessment, (2) evaluate whether the information reported in initial assessments is such that they will facilitate subsequent evaluation of progress across developmental domains, and (3) examine the nature and type of interventions recommended. Results indicated that over one-quarter of all assessments did not include a measure of adaptive functioning and almost one-third did not include a measure of intellectual functioning. Furthermore, a substantial number of assessments did not provide enough information to evaluate progress after diagnosis across these domains. Results also suggest that children with autism rarely receive a follow-up assessment following diagnosis. The most common recommendations in relation to intervention were placement in an Early intensive Behavioural Intervention programme (EIBI) and input from a multidisciplinary team. However, less than one third of assessments recommended the development of an individual Education Plan. Results are discussed in the context of the role of psychological assessment and intervention for children with an ASD in the Republic of Ireland. © 2010 by The Psychological Society of Ireland.

45. Grey I, Lynn E, McClean B. Parents of children with autism: Experiences of education service provision in the Republic of Ireland. Irish Journal of Psychology. 2010 //;31(3-4):111-24.

This is an exploratory study into parents' experiences of educational approaches for their children with autism. Fourteen interviews took place, seven with parents whose children were attending a school which provided Early Intensive Behavioural Intervention (EIBI) and seven with parents whose children were receiving typical statutory education provision in a special class for children with autism attached to a mainstream school, in line with current Department of Education and Science guidelines, this class adopted an eclectic mix of approaches. Thematic analysis of responses from a 30-item interview generated six themes: Availability of resources; assessment; communication; staff training and qualification; inclusion and mainstreaming; and parent experiences and roles. Responses pointed to a disparity in parental experiences regarding the provision of educational services between the ABA and non-ABA school with parents reporting greater overall satisfaction with the ABA school. © 2010 by The Psychological Society of Ireland.

46. Grey I, Pollard J, McClean B, Macauley N, Hastings R. Prevalence of psychiatric diagnoses and challenging behaviors in a community-based population of adults with intellectual disability. Journal of Mental Health Research in Intellectual Disabilities. 2010 //;3(4):210-22.

Previous research has suggested substantial variation in prevalence rates of psychiatric disorders in individuals with intellectual disability (ID) and also differential patterns of associations between psychiatric disorders and challenging behaviors in people with ID. The aim of this study was to determine the prevalence rate of specific psychiatric disorders and challenging behaviors and the relationship between them in a community-based sample of individuals with ID. A community-based sample of 159 adults primarily with mild and moderate ID was surveyed for the presence of psychiatric disorders and challenging behaviors using the Behavior Problem Inventory and the Psychiatric Assessment Schedule (PAS-ADD). Individuals who met threshold on the PAS-ADD were subsequently evaluated using the Mini PAS-ADD Interview. Screening for psychiatric disorders using the PAS-ADD indicated a prevalence rate of 10%. There was a large discrepancy between the overall rate of challenging behaviors (45%) and the rate of psychiatric disorders identified by the Mini PAS-ADD Interview (6%). However, the rate of more severe behavior problems (8%) was closer to the rate of psychiatric disorders (6%). Thirty-one percent of people with severe challenging behaviors also were rated as having psychiatric disorders and odd ratio analysis indicates that individuals with severe challenging behaviors are substantially more likely to present with a psychiatric disorder. However, the relationship between different topographies of challenging behaviors and discrete diagnostic categories of psychiatric disorders appears to be unclear. This study reports a low prevalence of psychiatric disorders in a community-based population. The presence of severe challenging behaviors appears to have some association with psychiatric disorders but does not appear specific to discrete diagnostic categories. Clinicians and researchers need to debate the validity of considering challenging behaviors atypical manifestations of psychiatric disorders. © Taylor & Francis Group, LLC.

47. Hamdy H, Telmesani AW, Al Wardy N, Abdel-Khalek N, Carruthers G, Hassan F, et al. Undergraduate medical education in the Gulf Cooperation Council: A multi-countries study (Part 1). Medical Teacher. 2010 //;32(3):219-24.

Background: The Gulf Cooperation Council (GCC) countries have witnessed over the last 40 years a rapid and major social, cultural, and economic transformation. The development of medical education in the region is

relatively new, dating from the late 1960s. An important goal among the medical colleges in the region is to graduate national physicians who can populate the healthcare service of each country. Aim: The aim of this study is to provide understanding of undergraduate medical education in each of the six GCC countries and the challenges that each face. Methods: This is a descriptive cross-sectional study. Fourteen senior medical faculty were requested to submit information about undergraduate medical education in their own countries, focusing on its historical background, student selection, curriculum, faculty, and challenges. Results: The information provided was about 27 medical colleges: 16 from the Kingdom of Saudi Arabia (KSA), five from the United Arab Emirates (UAE), two from the Kingdom of Bahrain, two from Sultanate of Oman, one from Kuwait, and one from the State of Qatar. It was found that older colleges are reviewing their curriculum while new colleges are developing their programs following current trends in medical education, particularly problem-based learning and integrated curricula. The programs as described 'on paper' look good but what needs to be evaluated is the curriculum 'in action'. Faculty development in medical education is taking place in most of the region's medical colleges. Conclusion: The challenges reported were mainly related to shortages of faculty, availability of clinical training facilities and the need to more integration with the National Health Care services. Attention to quality, standards, and accreditation is considered essential by all colleges. © 2010 Informa Healthcare Ltd.

48. Hamdy H, Telmesani AW, Wardy NA, Abdel-Khalek N, Carruthers G, Hassan F, et al. Undergraduate medical education in the Gulf Cooperation Council: A multi-countries study (Part 2). Medical Teacher. 2010 //;32(4):290-5.

Background: The Gulf Cooperation Council (GCC) countries have witnessed over the last 40 years a rapid and major social, cultural, and economic transformation. The development of medical education in the region is relatively new, dating from the late 1960s. An important goal among the medical colleges in the region is to graduate national physicians who can populate the healthcare service of each country. Aim: The aim of this study is to provide understanding of undergraduate medical education in each of the six GCC countries and the challenges that each face. Methods: This is a descriptive cross-sectional study. Fourteen senior medical faculty were requested to submit information about undergraduate medical education in their own countries, focusing on its historical background, student selection, curriculum, faculty, and challenges. Results: The information provided was about 27 medical colleges: 16 from the Kingdom of Saudi Arabia (KSA), five from the United Arab Emirates, two from the Kingdom of Bahrain, two from Sultanate of Oman, one from Kuwait and one from the State of Qatar. It was found that older colleges are reviewing their curriculum while new colleges are developing their programs following current trends in medical education particularly problem-based learning and integrated curricula. The programs as described 'on paper' look good but what needs to be evaluated is the curriculum 'in action'. Faculty development in medical education is taking place in most of the region's medical colleges. Conclusion: The challenges reported were mainly related to shortages of faculty, availability of clinical training facilities, and the need to more integration with the National Health Care services. Attention to quality, standards, and accreditation is considered essential by all colleges. © 2010 Informa UK Ltd. All rights reserved.

49. Henari FZ, Dakhel AA. Investigation of nonlinear optical properties of gold nanograins embedded in indium oxide films by reflection Z-scan using continuous laser. Journal of Applied Physics. 2010 //;108(12).

Nanograins of gold-embedded in indium oxide thin films were fabricated by vacuum evaporation on silicon substrate. The gold concentrations were 3, 5, and 7 at. % as measured by x-ray fluorescence method. The x-ray diffraction results reveal that pure gold was crystallized into nanograins embedded in the indium oxide medium. The nonlinear optical properties of films on silicon substrate were investigated by reflection z-scan technique, using cw laser at 514 nm. Measurements of nonlinear refractive index and nonlinear absorption coefficient on these films are reported and the mechanism responsible for the process of optical nonlinearities is discussed. © 2010 American Institute of Physics.

50. Kassab SE, Hussain S. Concept mapping assessment in a problem-based medical curriculum. Medical Teacher. 2010 //;32(11):926-31.

Background In the problem-based learning (PBL) medical curriculum at the Arabian Gulf University in Bahrain, students construct concept maps related to each case they study in PBL tutorials. Aim To evaluate the interrater reliability and predictive validity of concept map scores using a structured assessment tool. Methods We examined concept maps of the same cohort of students at the beginning (year 2) and end (year 4) of the pre-clerkship phase, where PBL is the main method of instruction. Concept maps were independently evaluated by five raters based on valid selection of concepts, hierarchical arrangement of concepts, integration, relationship to the context of the problem, and degree of student creativity. A 5-point Likert scale was used to evaluate each criterion. Interrater reliability of the instrument was determined using the intraclass correlation coefficient (ICC) and predictive validity was measured by testing the correlations of concept map scores with summative examination scores. Results The ICC of the concept map scores in year 2 was 0.75 (95 CI,0.670.81) and in year 4 was 0.69 (95 CI,0.590.77). Overall concept maps scores of year 4 students were significantly higher compared

with year 2 students ($p < 0.001$, effect size 0.5). The relationship between the students' scores in concept maps and their scores in summative examination varied from no to mild correlation. Conclusion The interrater reliability of concept map scores in this study is good to excellent. However, further studies are required to test the generalizability and validity of assessment using this tool. © 2010 Informa UK Ltd.

51. Khalaf AJ, Whitford DL. The use of complementary and alternative medicine by patients with diabetes mellitus in Bahrain: A cross-sectional study. BMC Complementary and Alternative Medicine. 2010 //;10.

Background: CAM use is widespread, especially among patients with diabetes. The Gulf States have a high prevalence of diabetes, alongside a long tradition of CAM use. The aim of this study is to establish the prevalence of CAM use among patients with diabetes mellitus in Bahrain and to examine the characteristics of the CAM users. Methods: A questionnaire was developed and administered to a convenience sample of patients with diabetes ($n = 402$) above the age of 20 attending two hospital diabetes clinics. Data were analysed using descriptive statistics and non-parametric tests of association. Results: 63% of responders utilized CAM within the previous 12 months. CAM users were more likely to be female, to have had diabetes for longer and to have complications of their diabetes. 64% of CAM users stated that they had used CAM for managing their diabetic condition, with 46% of these having used it solely for their diabetes. Respondents using CAM to manage their diabetes were more likely to be male, to be using CAM on a daily basis and to have informed their physician of their CAM use. Conclusions: There is a high rate of CAM use in patients with diabetes attending two hospital diabetes clinics in Bahrain. There is also a high rate of non-disclosure of CAM use to physicians. There is a continuing need for health professionals to be more aware and better trained in order to inform their decision making and communication related to CAM use. © 2010 Khalaf and Whitford; licensee BioMed Central Ltd.

52. Lynch CD, McGillicuddy CT, O'Sullivan VR, Sloan AJ. Gabriel-Philippe de la Hire and the discovery of Hunter-Schreger bands. British Dental Journal. 2010 //;209(9):461-5.

Hunter-Schreger bands are an optical phenomenon observed in mammalian tooth enamel. Familiar to all current and former students of dental histology, this optical phenomenon appears as alternating patterns of dark and light bands when cut enamel is viewed under reflected light. The discovery of this important feature of mammalian enamel has been historically credited to two eighteenth-century investigators, Hunter and Schreger. A re-evaluation of the evidence would suggest that the bands were observed almost seventy years earlier by a French scientist, Gabriel-Philippe de la Hire, and subsequently confirmed by the famous French dentist Pierre Fauchard. This article reviews the contribution of de la Hire, as well as that of Fauchard, Hunter and Schreger, to the early recognition among the scientific community of what would now be referred to as 'enamel microstructure'. © 2010 Macmillan Publishers Limited.

53. Lynch CD, O'Sullivan VR, Dockery P, McGillicuddy CT, Sloan AJ. Hunter-Schreger Band patterns in human tooth enamel. Journal of Anatomy. 2010 //;217(2):106-15.

Using light microscopy, we examined Hunter-Schreger Band (HSB) patterns on the axial and occlusal/incisal surfaces of 160 human teeth, sectioned in both the buccolingual and mesiodistal planes. We found regional variations in HSB packing densities (number of HSBs per mm of amelodentinal junction length) and patterns throughout the crown of each class of tooth (maxillary and mandibular: incisor, canine, premolar, and molar) examined. HSB packing densities were greatest in areas where functional and occlusal loads are greatest, such as the occlusal surfaces of posterior teeth and the incisal regions of incisors and canines. From this it is possible to infer that the behaviour of ameloblasts forming enamel prisms during amelogenesis is guided by genetic/evolutionary controls that act to increase the fracture and wear resistance of human tooth enamel. It is suggested that HSB packing densities and patterns are important in modern clinical dental treatments, such as the bonding of adhesive restorations to enamel, and in the development of conditions, such as abfraction and cracked tooth syndrome. © 2010 The Authors. Journal compilation © 2010 Anatomical Society of Great Britain and Ireland.

54. Marcus A, Sinnott B, Bradley S, Grey I. Treatment of idiopathic toe-walking in children with autism using GaitSpot Auditory Speakers and simplified habit reversal. Research in Autism Spectrum Disorders. 2010 //;4(2):260-7.

This study aimed to examine the effectiveness of a simplified habit reversal procedure (SHR) using differential reinforcement of incompatible behaviour (DRI) and a stimulus prompt (GaitSpot Auditory Squeakers) to reduce the frequency of idiopathic toe-walking (ITW) and increase the frequency of correct heel-to-toe-walking in three

children with autism. The study involved a delayed multiple baseline changing criterion design across individuals. Firstly, a baseline phase was conducted to determine the number of intervals where ITW occurred. Secondly, the GaitSpot Auditory Squeakers were paired with reinforcers. Thirdly, children wore GaitSpot squeakers over the heels of their feet under their shoes for a small number of 10 min sessions and when weight was placed on their heel, a squeak was emitted which was subsequently reinforced. Fourthly, the length of time the children wore the GaitSpot Auditory Squeakers was extended. Finally, the GaitSpot Auditory Squeakers were faded out and tests for generalisation and maintenance of heel-to-toe walking were conducted. The intervention produced substantial reductions in ITW across all participants though degree of reduction differed. The role of SHR and additional modifications for the treatment of ITW are discussed. © 2009 Elsevier Ltd. All rights reserved.

55. Ofurum KA, Whitford DL. Health-care associated infection rates among adult patients in Bahrain military hospital: A cross sectional survey. Bahrain Medical Bulletin. 2010 //;32(1).

Background/Objective: Health-care associated infections cause substantial morbidity and mortality with their prevalence varying between countries and hospitals. There are no published studies of health-care associated infections in hospitals in Bahrain and few in general military hospitals. Setting: Bahrain Defense Force Hospital. Design: Survey. The aim study is to establish the prevalence of health-care associated infections in a general military hospital in Bahrain. Method: A cross-sectional survey of a random sample of 500 medical records in the Bahrain Defence Force Hospital was carried out to ascertain the prevalence of health-care associated infections. Result: Four health-care associated infections were recorded - a prevalence of 0.87% (95% CI 0.34-2.22). Two of the infections were surgical site infections while the other two were skin infections. Conclusion: This study revealed that the prevalence of health-care associated infections is lower than recorded in most published studies.

56. Otoom S, Culligan K, Al-Assoomi B, Al-Ansari T. Analysis of drug prescriptions in primary health care centres in Bahrain. Analyse des prescriptions médicamenteuses dans les centres de soins de santé primaires à Bahreïn. 2010 //;16(5):511-5.

The aim of this study was to analyse drug prescribing practices in primary health care centres in Bahrain. We retrospectively evaluated 600 prescriptions selected randomly from all primary health care centres in Bahrain (n = 20) in 2004. Analysis followed WHO recommended prescribing core indicators. The mean number of drugs prescribed at each encounter was 3.3 (SD 0.7). A single drug was prescribed on 6.3% of prescriptions and drugs were prescribed by generic name on 10.2%. The percentage of total prescriptions for antibiotics was 45.8%, for injections was 9.3% and for vitamins was 12.5%. The prescribing pattern in primary health care centres in Bahrain is associated with polypharmacy, over-prescribing of antibiotics and an under-prescribing of drugs by generic names.

57. Whitford DL, Al-Sabbagh M. Cultural variations in attitudes towards family risk of diabetes. Diabetes Research and Clinical Practice. 2010 //;90(2):173-81.

Aims: To examine differences in attitudes and behaviours towards familial risk of type 2 diabetes in populations in Ireland and Bahrain. Methods: Cross-sectional ecological study. Questionnaires were developed and administered to patients with diabetes and their first degree relatives in both Bahrain and Ireland. Data was analysed using non-parametric tests of association. Results: Responses were compared between 297 patients with diabetes from Ireland and 201 from Bahrain and between 364 relatives of patients with diabetes in Ireland and 244 from Bahrain. Relatives in Bahrain had more knowledge of risk factors for diabetes and an increased perception of the seriousness of diabetes but a more external, chance locus of control and perceived more barriers to changing lifestyles than those in Ireland. There was no difference in perception of personal risk of diabetes. Conclusions: Knowledge of risk factors and seriousness of diabetes are higher in Bahrain than in Ireland but perception of personal risk of diabetes and intention to adopt risk reducing behaviours are no different. There is a need to develop models of behavioural change that are more relevant to the needs of the Bahraini population in reducing their risk of diabetes. © 2010 Elsevier Ireland Ltd.

RCSI Bahrain Publications 2011 with abstracts

58. Al-Muhannadi N, Ansari N, Brahmi U, Satir AA. Differential diagnosis of malignant epithelial tumours in the liver: An immunohistochemical study on liver biopsy material. *Annals of Hepatology*. 2011 //;10(4):508-15.

Introduction. A variety of primary and secondary malignant tumours may present in the liver. In clinical practice the most commonly encountered hepatic tumours are primary hepatocellular carcinoma, metastatic carcinoma and primary cholangiocarcinoma, each with its separate prognostic and management implications. When these tumours are poorly differentiated and the biopsy size is limited to a needle core, the distinction can be extremely difficult. **Material and methods.** All liver tumours reported between 1994 and 2004 were examined. Slides from each case were tested separately with each of nine antibodies (HepPar1, CD10, MOC31, Villin, pCEA, mCEA, CK7, CK19, and CK20). **Results.** Liver biopsy tissue from 53 patients was examined in this retrospective study. The 53 liver biopsies were classified thus: hepatocellular carcinoma (n = 23); metastatic adenocarcinoma (n = 15); cholangiocarcinoma (n = 5); metastatic small cell carcinoma (n = 7); liver cell dysplasia (n = 1); carcinoid (n = 1); and unclassified (n = 1). Sensitivity and specificity values for different antibodies in relation to their positive staining of specific tumours was as follows: HepPar1 for HCC-81.8% and 100%; MOC31 for MA-73.3% and 92.1%; MOC31 for MA and CC as a combined group-65% and 100%; pCEA (canalicular) for HCC-82.6% and 83.3%; mCEA for MA-93.3% and 75.6%; CK7 for CC-100% and 68%; CK19 for MA and CC as a combined group-90% and 86.3%. **Conclusions.** An antibody panel consisting of HepPar1, pCEA, CK19 and CK7 together with either MOC31 or mCEA is recommended for use in the differential diagnosis of HCC, MA and CC.

59. Almuqammam MA, Ebrahim MA, Radhi HA, Henari FZ. Refractive Errors in the Bahrain Population. *World Family Medicine Journal*. 2011;9(2):7-11.

Aim: The objective of this study was to demonstrate the prevalence of refractive errors in the Bahrain population. **Method:** A total of 17,936 eye patients between 10-35 years of age living in Bahrain were included in this study. A data record for 2008 was collected from Bahrain Optician clinics. The records involved patients with refractive errors such as myopia (nearsightedness), hyperopia (farsightedness), astigmatism and antimetropia (one eye is myopic and the other is hyperopic).

Results: Out of 17,936 patients 54.6 % were myopic; 4.9 % hyperopic; 39.9% astigmatismic and 0.6% antimetropia. For myopia patients, the prevalence was the highest at 25.6% for patients between the ages of 15-19 and decreasing to 15.8% for patients of ages 30-35. The prevalence of hyperopia was 18.3% for patients of 15-19 years of age and increased to 22.9% for patients of 30-35 years of age. For astigmatism the prevalence was the highest at 21.3% for patients of 15-19 years of age and was lowest at 18.9% for patients of 10-14 years of age and for antimetropia the prevalence was the highest at 23.6% for patients of 20-24 years of age and was the lowest at 15% for patients of 10-14 years of age.

Conclusion: The prevalence of refractive errors varies across different age groups. Myopia has the highest prevalence followed by astigmatism, while antimetropia is quite rare. Furthermore, patients in the age group of 15-19 showed high susceptibility to develop myopia and astigmatism.

60. Chan WS, Whitford DL, Conroy R, Gibney D, Hollywood B. A multidisciplinary primary care team consultation in a socio-economically deprived community: An exploratory randomised controlled trial. *BMC Health Services Research*. 2011 //;11.

Background: Psychosocial problems in socioeconomically deprived communities are not always amenable to traditional medical approaches. Mothers living in these areas are a particularly vulnerable group. The objective of this study was to evaluate the effectiveness of a lengthened multi-disciplinary team consultation in primary care in reducing anxiety and depression in mothers. **Methods.** This was a prospective randomised controlled trial of a multidisciplinary team consultation against normal care. 94 mothers were recruited from three general practices from an area of extreme socio-economic deprivation. Mothers randomised into the intervention group attended a multidisciplinary consultation with up to four case-specific health care professionals. Consultations addressed medical, psychological and social problems and lasted up to one hour. Conventional primary care continued to be available to the intervention families. Control group families received normal primary care services. The outcomes measured were anxiety and depression as using the Hospital Anxiety and Depression Scale (HADS), health status using SF36v2, and quality of life using the abbreviated Schedule for the Evaluation of Individual Quality of Life (SEIQoL-DW) at baseline, 6 months and 12 months. **Results:** Ordered logistic regression was used to analyse the data. There was no significant difference found between intervention and control groups after 6 months and 12 months in all of the measured outcomes. **Conclusions:** The new lengthened multi-disciplinary team consultation did not have any impact on the mental health, general health, and quality of life of mothers after 6 and 12 months. Other methods of primary health care delivery in socio-economically deprived communities need to be evaluated. © 2011 Chan et al; licensee BioMed Central Ltd.

61. Dakhel AA, Henari FZ. Optical and structural properties of silver nanoparticles embedded in indium oxide films. International Journal of Nanoscience. 2011 //;10(3):433-40.

Nanoparticles of silver-embedded indium oxide thin films have been prepared on glass and silicon substrates. Silver concentration were 3 wt.% and 5 wt.% as measured by X-ray fluorescence. X-ray diffraction reveals that indium oxide of these samples remains amorphous even after pre-annealing at 400°C. The optical absorption of the samples manifests the surface plasmon resonance (SPR) phenomena, which varies with Ag content. The Ag nanoparticles radius was estimated with Mie classical theory by using the SPR data analysis. The nonlinear optical properties of films on glass substrate were investigated using z-scan technique. Under cw excitation the films exhibit large reverse saturation absorption and negative nonlinearities. The real and imaginary parts of third order susceptibility of the samples were measured and the imaginary part which arise from the change in absorption is found to be dominant. © 2011 World Scientific Publishing Company.

62. Faisal H, Radwan A, Ansari N. Primary pulmonary botryomycosis presenting with septic shock and acute lung injury. BMJ Case Reports. 2011 //.

Botryomycosis is a rare chronic suppurative bacterial infection involving mostly subcutaneous tissues and less frequently other organs. It can be diagnosed by histological examination and culture of the granules. Botryomycosis is mostly caused by Staphylococcus aureus, Escherichia coli and Pseudomonas aeruginosa but the exact pathogenesis remains uncertain. Treatment often requires a combination of both surgical debridement and long-term antimicrobial therapy. The patient is a young woman known to have Down's syndrome. She had a dramatic presentation with septic shock and acute lung injury with persistence of pulmonary sepsis postoperatively. The importance of postoperative critical care is illustrated by this case in which a young patient underwent major surgery while septic and haemodynamically unstable. According to our research this is the first case of pulmonary botryomycosis reported in Down's syndrome and the first case which developed septic shock requiring vasoactive drugs and ventilation in the intensive care unit. Copyright 2011 BMJ Publishing Group. All rights reserved.

63. Garadah TS, Kassab S, Golbahar J. Association of hypokalemia with severe arrhythmias in patients with acute myocardial infarction. Bahrain Medical Bulletin. 2011 //;33(1).

Background: Clinical and animal studies suggest that the ischemic heart can be particularly vulnerable to hypokalemia leading to the cardiac arrhythmia. Objective: To evaluate the association of severe arrhythmia with hypokalemia in patients with acute myocardial infarction (AMI). Design: Retrospective study. Setting: Coronary Care Unit, Salmaniya Medical Complex. Method: Two hundred and seventy-four patients with AMI had serum potassium levels measured on admission along with other cardiovascular risk factors. Result: Serum potassium concentrations were significantly decreased with the severity of arrhythmias (no arrhythmias; 4.2 ± 0.80 mmol/l, supra-ventricular; 3.8 ± 0.9 mmol/l, and ventricular arrhythmias; 3.3 ± 0.5 mmol/l, $p=0.0001$). The risks of supra-ventricular and ventricular arrhythmias were significantly increased by 2.4 and 8.3 fold, respectively in patients with serum potassium levels at the lowest quartile (<3.5 mmol/l) compared with the highest quartile of serum potassium when adjusted for other risk factors. Conclusion: The results of this study suggest that hypokalemia is independently associated with the severity of arrhythmias in patients with AMI.

64. Garadah TS, Mahdi N, Kassab S, Abu-Taleb A, Shoroqi I, Alawadi AH. The impact of two different doses of chelating therapy (deferasirox) on echocardiographic tissue Doppler indices in patients with thalassemia major. European Journal of Haematology. 2011 //;87(3):267-73.

Background: Chelating therapy in transfusion-dependent patients with β -thalassemia major (β -TM) is mandatory to reduce the toxic effect of iron on the myocardium. Aim: To evaluate the impact of low and high dose of oral chelating therapy (deferasirox) on pulsed and tissue echocardiographic indices in patients with β -TM. Methods: This interventional study conducted on patients with transfusion-dependent β -TM ($n=38$) on deferasirox 20mg/kg/d medication, group (DFX-20) for at least 6months, followed by administration of a higher dose of deferasirox, 40mg/kg/d, group (DFX-40) for another 6months. Pulsed and tissue Doppler echocardiography carried out at the beginning and at the end of treatment interval (6months) for both groups, with monthly blood analysis of serum ferritin, alanine transaminase, hemoglobin, and creatinine. An age-matched control group of 38 patients was evaluated for echo Doppler blood analysis. Results: Patients of group DXF-40 compared with group DFX-20, the tissue Doppler echocardiogram showed lower E/Em ratio (16.01 ± 2.85 vs. 19.68 ± 2.81 , $P<0.05$), higher systolic wave velocity (Sm) (5.87 ± 1.40 vs. 4.80 ± 1.20 , $P<0.05$), and higher early diastolic wave (Em) velocity (4.25 ± 1.70 vs. 3.50 ± 1.80 , $P<0.05$), respectively. Patients in group DFX-20, compared with control group, had M-Mode echo with thicker left ventricle (LV) septal wall ($P<0.001$) and posterior wall ($P<0.01$), higher left

ventricle end diastolic diameter index ($P < 0.05$). The pulsed Doppler echocardiogram showed a higher LV transmitral E wave velocity ($P < 0.05$), higher E/A ratio ($P < 0.01$), and the duration of deceleration time was significantly shorter ($P < 0.01$). There were no significant changes observed in the left ventricle ejection fraction percentage (LVEF%) or fractional shortening between both treatment groups. Serum ferritin was significantly lower in DFX-40 group compared with DFX-20 β -TM group (338). There was a significant positive correlation between the serum ferritin and the E/Em ratio ($r = 0.31$, $P < 0.001$). The tricuspid valve velocity was significantly higher in β -TM patients compared with the control group ($P < 0.05$). Conclusion: The increment of oral deferasirox as chelating therapy in β -TM patients to 40mg/kg/d over 6 months duration showed a significant increments of systolic and diastolic tissue Doppler velocities with a significant reduction of E/Em ratio in comparison with 20mg/kg/d. There were no changes of LVEF. A longer duration of follow-up may be justified in such group of patients. © 2011 John Wiley & Sons A/S.

65. Hayes A, Holden-Rachiotis C, Kavanagh B, Otoom S. Bridging the gap: On easing the transition from arab secondary to western third level learning. Evaluation and Research in Education. 2011 //;24(2):105-20.

Learning and achievement issues among Foundation Year (FY) students at the Royal College of Surgeons (RCSI) Bahrain have been responded to by the Language and Culture Unit to address the educational problems that have arisen as a direct consequence of the differences in skills students have on leaving secondary school and the skills that are required at third level institutions. The findings of the study assess the extent to which an integration of sustainable development into course objectives and learning outcomes takes place and how the content of the course responds to specific students' needs. The research consists of an in-depth quantitative and qualitative case study that evaluates the extent to which the course enables the transition from a secondary to a third level institution and teaches the students the skills required to 'survive' at a western type university. In support of our claim, the results from this case study will be presented and implications of a more general relevance will be suggested. Our model of an academic skills intervention programme can be applied to other higher education institutions where issues of transition from secondary to third level learning may be problematic. © 2011 Taylor & Francis.

66. Henari FZ, Asiri AM. Non-linear refractive index measurement of (2E)-3-[4-(Dimethylamino)phenyl]-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one and (2E)-3-(3,4-Dimethoxyphenyl)-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one. Journal of Nonlinear Optical Physics and Materials. 2011 //;20(2):183-91.

We report results from investigations of the nonlinear refractive index and nonlinear absorption coefficient of (2E)-3-[4-(Dimethylamino)phenyl]-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one and (2E)-3-(3,4-Dimethoxyphenyl)-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one using Z-scan technique with a continuous wave (cw) laser at wavelengths 488 nm and 514 nm. The nonlinear refractive index and nonlinear absorption coefficient of both samples were evaluated. The origin of the nonlinear effects was discussed. Optical limiting based on light induced nonlinear refractive index variation is demonstrated. The limiting thresholds were estimated for both samples. The results suggested that these materials offer promise as candidates for optical limiting and optical devices in the low power regime. © 2011 World Scientific Publishing Company.

67. Henari FZ, Dakhel AA. Observation of simultaneous reverse saturation absorption and saturation absorption in silver nanoparticles incorporated into europium oxide thin film. Optics Communications. 2011 //;284(2):651-5.

In this work, nano silver clusters incorporated into europium oxide thin films at a level of 3.8% and 12.5% have been prepared by a vacuum evaporation method on glass and silicon substrates. Samples were investigated by X-ray fluorescence, X-ray diffraction, and linear and nonlinear optical absorption methods. The X-ray diffraction reveals that the Eu oxide of these samples remains amorphous after pre-annealing at 400 °C. The linear optical absorption of the samples shows surface plasmon resonance (SPR) phenomena, which varies with the Ag content of the samples. The optical nonlinear absorption properties of the prepared films were investigated using an open Z-scan technique with cw laser at wavelengths 476 nm and 514 nm. A changeover from reverse saturation absorption (RSA) to saturation absorption (SA) was observed. RSA is attributed to interband transition via two photon absorption. SA is attributed to plasmon bleach. © 2010 Elsevier B.V. All rights reserved.

68. Jassim GA. Strategies for managing hot flashes. Journal of Family Practice. 2011 //;60(6):333-9.

69. Lynch CD, O'Sullivan VR, Dockery P, McGillicuddy CT, Rees JS, Sloan AJ. Hunter-Schreger Band patterns and their implications for clinical dentistry. Journal of Oral Rehabilitation. 2011 //;38(5):359-65.

Hunter-Schreger Bands (HSBs) are an optical phenomenon visualised when a cut or fractured enamel surface is viewed under reflected light. These bands demonstrate the synchronous decussation of individual or groups of enamel prisms. While the role of HSB patterns has been investigated in comparative anatomical studies, until recently there has been little consideration of HSB patterns in human teeth. The aim of this paper is to consider the significance of HSB patterns in the human dentition and in relation to clinical dentistry. It is concluded that within the human dentition, HSB patterns have evolved to optimise resistance to attrition, abrasion and tooth fracture. It appears that certain aspects of HSB packing densities and distributions have beneficial roles in enamel bonding. Hunter-Schreger Band patterns seem to passively facilitate conditions such as abfraction and cracked tooth syndrome. © 2010 Blackwell Publishing Ltd.

70. O'Reilly F, O'Connell D, O'Carroll A, Whitford DL, Long J. Sharing control: User involvement in general practice based methadone maintenance. Irish Journal of Psychological Medicine. 2011 //;28(3):129-33.

Objectives: This study assessed patients' views of a methadone programme in a Dublin general practice including the degree to which the patients were 'involved in decisions about their treatment'. Method: All patients receiving methadone were asked to participate. A face to face questionnaire, with open and closed questions, was administered. Interviews lasted approximately 30 minutes. Quantitative data were analysed using descriptive statistics and qualitative data were analysed using a thematic approach. Results: Forty one (87%) of the 47 patients attending the general practice methadone service were interviewed. Of the 39 patients who had used heroin on admission, 69% had stopped and 31% reduced heroin use since starting methadone treatment. A total of 71% reported that the doctor either always involved (59%) or sometimes involved (12%) them in decisions about their treatment. Involvement was interpreted as 'being listened to' or 'having a say' in deciding methadone dose. Surprisingly those who reported that they were not involved in treatment decisions were more likely to have stopped heroin use (10/11). A significant majority of patients (81 %) expressed the desire to stop taking methadone. Conclusion: Most patients receiving methadone in general practice were listened to and had a say in deciding their methadone dose but did not have an opportunity to engage in more structured or contractual forms of involvement in treatment such as written care plans. In line with a patient centred approach, treatment providers should set their sights beyond the safe delivery of methadone, to provide a service which is centred on patient goals, expectations and choice.

71. Otoom S, Sequeira RP. Veratridine induced absence like-seizure in the freely moving rats: A study correlating the behavioural findings with the electrophysiological activities. Neuroendocrinology Letters. 2011 //;32(4):487-90.

OBJECTIVES: Veratridine was characterized previously as an experimental model of epilepsy in vitro. The aim of this preliminary investigation is to identify the pattern of seizure induced by this model in vivo. MATERIAL AND METHODS: Veratridine (200 µg/kg) was administered intraperitoneally to male Sprague-Dawley rats and the electrical activity of the brain was recorded as surface electroencephalogram (EEG). RESULTS: The animals developed behavioral effects manifested as grooming, masticatory movements, facial automatism and wet dog shakes (WDSs). There were episodes of complete quiescent periods for 2-5 minutes before the animals resumed activity which were repeated every 15-20 minutes. The seizure activity during this silent activity showed fast frequency signals in the surface EEG correlating with absence seizure. The WDS behaviour was associated with electrical spikes on the EEG. When the rats were pre-treated with 200mg/kg ethosuximide (ETX), EEG recordings did not display the same fast frequency signal as that observed in animals receiving veratridine only. The number and duration of WDSs were not altered by ETX (200-400 mg/kg). CONCLUSION: Veratridine produced an absence like-seizure activity in the surface EEG, sensitive to ETX and correlates with its behavioural effects. © 2011 Neuroendocrinology Letters.

72. Shivji ZM, Al-Baharna MM, Kadi GA, Al-Osaimi AM, Bin-Sadiq BM, Jan MM. Pediatric electroencephalography. Parent's knowledge and experience. Neurosciences. 2011 //;16(3):283-4.

73. Smith SM, Paul G, Kelly A, Whitford DL, O'Shea E, O'Dowd T. Peer support for patients with type 2 diabetes: Cluster randomised controlled trial. BMJ. 2011 //;342(7795):482.

Objective: To test the effectiveness of peer support for patients with type 2 diabetes. Design: Cluster randomised controlled. Setting: 20 general practices in the east of the Republic of Ireland. Participants: 395 patients (192 in intervention group, 203 in control group) and 29 peer supporters with type 2 diabetes. Intervention: All practices introduced a standardised diabetes care system. The peer support intervention ran over a two year period and contained four elements: the recruitment and training of peer supporters, nine group meetings led by peer supporters in participant's own general practice, and a retention plan for the peer supporters. Main outcome measures: HbA 1c; cholesterol concentration; systolic blood pressure; and wellbeing score. Results: There was no difference between intervention and control patients at baseline. All practices and 85% (337) of patients were followed up. At two year follow-up, there were no significant differences in HbA 1c (mean difference -0.08%, 95% confidence interval -0.35% to 0.18%), systolic blood pressure (-3.9 mm Hg, -8.9 to 1.1 mm Hg), total cholesterol concentration (-0.03 mmol/L, -0.28 to 0.22 mmol/L), or wellbeing scores (-0.7, -2.3 to 0.8). While there was a trend towards decreases in the proportion of patients with poorly controlled risk factors at follow-up, particularly for systolic blood pressure (52% (87/166) \geq 130 mm Hg in intervention v 61% (103/169) \geq 130 mm Hg in control), these changes were not significant. The process evaluation indicated that the intervention was generally delivered as intended, though 18% (35) of patients in the intervention group never attended any group meetings. Conclusions: A group based peer support intervention is feasible in general practice settings, but the intervention was not effective when targeted at all patients with type 2 diabetes. While there was a trend towards improvements of clinical outcomes, the results do not support the widespread adoption of peer support. Trial registration: Current Controlled Trials ISRCTN42541690.

RCSI Bahrain Publications 2012 with abstracts

74. Al Sabbagh M. Hypertension: Prevalence of Selected Risk Factors and Blood Pressure Control. Middle East Journal of Family Medicine. 2012;10(10):29-39.

Background and Objectives: Hypertension is highly prevalent worldwide. The objectives of this study were to investigate the prevalence of selected risk factors and the degree of blood pressure control in hypertensive patients.

Methods: All hypertensive patients attending the Non-Communicable Diseases Clinic in Northern Muharraq Health Centre in a period of three weeks, were included. Data were extracted from patient records and questionnaires.

Results: Among hypertensive patients, around a half had satisfactory blood pressure control. Systolic blood pressure was statistically significantly directly correlated with age ($p=.033$), a positive family history of hypertension in parent(s) ($p=.018$) and diastolic blood pressure ($p=.000$). Diastolic blood pressure was statistically significantly directly correlated with smoking ($p=.008$), positive family history of hypertension in sibling(s) ($p=.024$), and systolic blood pressure ($p=.000$). It was also statistically significantly inversely correlated with age ($p=.018$). As for systolic blood pressure, and according to linear regression, age ($p=.000$) and a positive family history of hypertension in parents ($p=.017$) were found to be significant predictor variables. For diastolic blood pressure, age ($p=.000$), smoking ($p=.005$) and systolic blood pressure ($p=.000$) were found to be significant predictor variables.

Conclusion: Blood pressure control among hypertensive patients was improved.

75. Alani R, Alsada A, Murphy JF. Ovarian ectopic pregnancy managed laparoscopically. Bahrain Medical Bulletin. 2012 //;34(4).

Ovarian pregnancy is a rare type of ectopic pregnancy. We report an ovarian ectopic pregnancy at the right ovary. A thirty-eight year old woman presented with amenorrhea for six weeks and lower abdominal pain. Beta-human chorionic gonadotropin (BHCG) was 2290 IU. Imaging revealed a mass at the right adnexa about 3x2.5 cm and blood clots were adherent to the uterus. The mass was removed through emergency laparoscopy. Pathology revealed ovarian pregnancy. Serial monitoring of BHCG level to confirm the complete removal of placental tissue was done.

76. Alsad AE, Murphy JF. The value of cervical cerclage in preventing pregnancy loss. Bahrain Medical Bulletin. 2012 //;34(3).

Objective: To determine the value of cervical cerclage in preventing pregnancy loss in patients with presumed cervical incompetence. Design: Retrospective study. Setting: Department of Obstetrics and Gynecology, Bahrain Defense Force Hospital. Method: The study was performed from 1 January 2009 to 30 May 2010. Fifty-six patients with a history of previous pregnancy loss, and patients with multiple pregnancies following assisted conceptions were included in the study. Obstetrics data were obtained from clinical and surgical record. The McDonald technique cerclage was used. The gestational age at cerclage insertion was recorded. The cerclage was removed electively at 36-37 weeks or sooner as events detected. Result: Thirteen (23.2%) patients had multiple pregnancies following assisted conception. Three (5.4%) had spontaneous abortion, twenty-two (39.3%) had preterm delivery, before 37 weeks, of these nine were the result of pregnancies following assisted conceptions, Thirty-one (55.3%) reached term (37+weeks), thirty-four (60.7%) had vaginal delivery of which seven (20.6%) had their labor induced between 38-41 weeks. Nineteen (33.9%) patients were delivered by Caesarian section. Sixty-one babies were delivered in this period; nine neonates required intubation and admitted to intensive care unit because of prematurity and one death due to extreme prematurity of 26 weeks. In patients who had the cerclage removal electively, 24 (42.9%) went into labor within 24 hours; and 30 (53.6%) went into labor between 24 hours and 33 days. Conclusion: Cervical cerclage is preventive in singleton pregnancy with short and incompetent cervix or in patients who had obstetric history. No benefit was observed for the use of cerclage in multiple pregnancies following assisted conceptions.

77. Babiker R, Merghani TH, Elmusharaf K, Badi RM, Lang F, Saeed AM. Effects of gum Arabic ingestion on body mass index and body fat percentage in healthy adult females: Two-arm randomized, placebo controlled, double-blind trial. Nutrition Journal. 2012 //;11(1).

Background: Gum Arabic (acacia Senegal) is a complex polysaccharide indigestible to both humans and animals. It has been considered as a safe dietary fiber by the United States, Food and Drug Administration (FDA) since the 1970s. Although its effects were extensively studied in animals, there is paucity of data regarding its quantified use in humans. This study was conducted to determine effects of regular Gum Arabic (GA) ingestion

on body mass index and body fat percentage among healthy adult females. **Methods.** A two-arm randomized, placebo controlled, double-blind trial was conducted in the Department of Physiology at the Khartoum University. A total of 120 healthy females completed the study. They were divided to two groups: A test group of 60 volunteers receiving GA (30 gm /day) for 6 weeks and a placebo group of 60 volunteers receiving pectin (1 gm/day) for the same period of time. Weight and height were measured before and after intervention using standardized height and weight scales. Skin fold thickness was measured using Harpenden Skin fold caliper. Fat percentage was calculated using Jackson and Pollock 7 caliper method and Siri equation. **Results:** Pre and post analysis among the study group showed significant reduction in BMI by 0.32 (95% CI: 0.17 to 0.47; $P < 0.0001$) and body fat percentage by 2.18% (95% CI: 1.54 to 2.83; $P < 0.0001$) following regular intake of 30 gm /day Gum Arabic for six weeks. Side effects caused by GA ingestion were experienced only in the first week. They included unfavorable viscous sensation in the mouth, early morning nausea, mild diarrhea and bloating abdomen. **Conclusions:** GA ingestion causes significant reduction in BMI and body fat percentage among healthy adult females. The effect could be exploited in the treatment of obesity. © 2012 Babiker et al.; licensee BioMed Central Ltd.

78. Drennan J. Masters in nursing degrees: an evaluation of management and leadership outcomes using a retrospective pre-test design. Journal of nursing management. 2012 Jan;20(1):102-12. PubMed PMID: 22229906. Epub 2012/01/11. eng.

AIM: The aim of the present study was to measure the leadership and management abilities of graduates who had completed a master's degree in nursing. **BACKGROUND:** A number of reports have recommended that leadership competencies be integrated into education programmes for nurses at a master's level. In spite of the growth in the number of graduates from higher degrees in nursing, there is a paucity of evidence on the management and leadership outcomes that develop as a result of undertaking a master's degree. **METHODS:** A cross-sectional survey using a retrospective pre-test design was used to measure self-reported leadership and management outcomes from the graduates' educational programmes. **RESULTS:** Results found that graduates had gained significantly on their ability to change practice, communicate and work as part of a team and to problem solve as an outcome of completing a master's degree in nursing. **CONCLUSION:** Graduates make substantial gains in leadership and management capabilities as a consequence of their higher degree. These capabilities are necessary as nurses take the lead in many areas of healthcare. **IMPLICATIONS FOR NURSING MANAGEMENT:** The masters in nursing degree now has a pivotal role in providing effective continuing education to the nursing profession; especially for those who occupy or intend to occupy senior positions within clinical, management or education branches of the profession.

79. Gaynor D, Griffith DM. The prevalence of metal-based drugs as therapeutic or diagnostic agents: Beyond platinum. Dalton Transactions. 2012 //;41(43):13239-57.

Metal complexes and metal salts have a wide range of medicinal applications and are extensively administered to patients or purchased over the counter as a matter of routine. The abundance and variety of non-platinum metal complexes, which are approved for use as therapeutic or diagnostic agents, are highlighted. Current insights into the mechanism of action or indeed lack thereof of a selection of metallodrugs are discussed. Ultimately this perspective seeks to inspire chemists to tackle new challenges and raise awareness of opportunities in the area of inorganic therapeutic and diagnostic medicine. This journal is © 2012 The Royal Society of Chemistry.

80. Henari FZ, Al-Saie A, Culligan KG. Optical limiting behavior of bromophenol blue and its dependence on pH. Journal of Nonlinear Optical Physics and Materials. 2012 //;21(1).

The nonlinear properties and optical limiting performance of Bromophenol indicator solution were investigated using continuous wave laser beam at 488 nm and 514 nm. A z-scan technique was used to measure the nonlinear refractive index. The optical limiting was investigated by monitoring the output transmission through the samples at different concentrations and at different pH values. The results show the dependence of the optical limiting threshold on concentration as well as on the pH values of the solution. The investigation shows that bromophenol blue is a potential candidate for optical limiting. Results also show that the optical limiting values can be used as a pH indicator. © 2012 World Scientific Publishing Company.

81. Henari FZ, Cassidy S. Non-linear optical properties and all optical switching of Congo red in solution. Optik. 2012 //;123(8):711-4.

We present the results from investigations of the nonlinear properties of Congo red solutions using Z-scan technique with a continuous wave argon ion laser at 514 nm. The magnitude and sign of the third-order nonlinear refractive index n_2 of aqueous solution of Congo red were determined. The nonlinear refractive index was found to vary with concentration. Third-order nonlinearity is dominated by nonlinear refractive index, which leads to

strong self-defocusing and self diffraction in the samples studied. A pump and probe technique was used to investigate the origin of nonlinearity. Furthermore the nonlinear refractive index effect was utilized to demonstrate all optical switching. The optical limiting behavior based on nonlinear refractive index was investigated. © 2011 Elsevier GmbH. All rights reserved.

82. Henari FZ, Gaynor D, Griffith DM, Mulcahy C, Marmion CJ. Non-linear optical measurement of Iron(III) Tris(pyridinehydroxamate) complexes. Chemical Physics Letters. 2012 //;552:126-9.

We present results of the nonlinear refractive index and nonlinear absorption coefficient [Fe III(3-pyha) 3] and [Fe III(4-pyha) 3] water solutions, using Z-scan technique with a low power continuous wave laser at 633 nm. No qualitative differences were observed in absorption and refractive index nonlinear processes for both samples. We propose that the nonlinear absorption involves two photon absorption. The two photon absorption cross sections for both samples at 633 nm were calculated. Pump and probe technique was used to record triplet state absorption spectrum. The band gap of the triplet state was estimated from the spectrum. The use of these complexes in photo-dynamic therapy is discussed. © 2012 Elsevier B.V. All rights reserved.

83. Hubail AR, Culligan KG. Current prospectus on obesity in Bahrain and determination of percentage body fat range. Bahrain Medical Bulletin. 2012 //;34(1):1-9.

Background: Obesity and its related disorders are becoming an overburden on healthcare systems worldwide. Objective: To evaluate the current status of obesity in Bahrain and predict percentage body fat. Setting: Shopping mall in Bahrain. Design: Prospective cross-sectional study. Method: Four hundred fourteen volunteers were recruited; each provided informed consent. A range of physical measurements were collected from each individual and used to calculate the parameters obtained. Result: The average body mass index (BMI) for males was 28.2 kg/m² and for females was 28.6 kg/m². This increased with age, showing a biphasic increase for females. Linear transformation of BMI data showed greater significance in correlating BMI versus percent body fat. However, prediction equations for calculation of percent body fat were more accurate without linear transformation of data. Percent body fat ranges for Bahrain, corresponding to BMI categories were derived. Conclusion: Prevalence rates for obesity in Bahrain are higher than predicted and are increasing at a higher rate than the global average. This mirrors the alarming increase in the prevalence of Type 2 Diabetes Mellitus in Bahrain.

84. Nasaif HA. Knowledge and attitudes of primary care physicians toward the nurse practitioner role in the Kingdom of Bahrain. Journal of the American Academy of Nurse Practitioners. 2012 //;24(3):124-31.

Purpose: The Kingdom of Bahrain is facing a number of challenges, including an escalating cost of health services, increasing incidence of chronic diseases, and shortage of primary care physicians (PCPs). Introducing the nurse practitioner (NP) specialty in the primary care setting is one way to meet these challenges. The purpose of this quasi-experimental study was to examine the knowledge and attitudes of PCPs about the NP role prior to and following an educational intervention. Data sources: The modified Northern Emergency Nurse Practitioner Staff Survey was used to measure the PCPs' attitudes and knowledge. A total of 90 PCPs completed the pretest and posttest. Conclusions: The study findings showed that PCPs had poor understanding of the NP role. Their knowledge and attitudes changed significantly after the educational intervention. Also, posttest data indicated a positive correlation between knowledge and attitudes toward the NP role. Implications for practice: More educational preparation and orientation to the NP role for PCPs and other healthcare professionals are needed before the implementation of the role in the primary care setting in Bahrain. There is a need for the role to be clearly defined prior to implementation to help gain understanding and acceptance. © 2012 The Author(s) Journal compilation © 2012 American Academy of Nurse Practitioners.

85. Parsanezhad ME, Forooghnia L, Parsa-Nezhad M. Hyperreactio Luteinalis after IVF. 2012. p. 409-11.

Hyperreactio luteinalis is a benign ovarian lesion that results from exaggerated physiological follicle stimulation. It is associated with high serum level of HCG and bilateral moderately to massively enlarged cystic ovaries. The diagnosis is based on ultrasonographic findings of bilateral ovarian enlargement that is containing multiple cysts with various sizes. The condition may be difficult to clinically differentiate in the first trimester from ovarian hyperstimulation syndrome following IVF treatment. Since the condition is self-limiting and usually undergoes spontaneous regression, conservative management is recommended. © 2012 Blackwell Publishing.

86. Tawash E, Cowman S, Anunciacion E. A triangulation study: Bahraini nursing students' perceptions of nursing as a career. Journal of Nursing Education and Practice. 2012;2(3):81-92.

Background: There is a broad international literature examining the perceptions, experiences and values of nursing students with very little investigative work from the Gulf region and no published work on the perceptions of student nurses from Bahrain. The literature shows that students have a wide range of pre-existing perceptions about nursing and that those early perceptions have a profound influence on their decision to continue with their nursing studies. Historically, in a context of migration, Bahrain has been attractive to expatriate nurses and this has created an overreliance on external manpower which leads to the detriment of developing an indigenous nursing profession. This study aims to identify the perceptions and experiences of student nurses in Bahrain about nursing as a career choice and generate an understanding of the factors influencing recruitment to nursing from the Bahraini population. Methods: A triangulation research design engaging quantitative and qualitative data collection methods was used in the study. Data were obtained through student nurses' written reflections, self-reporting questionnaires and focus groups collected during their nursing programme. The study participants were the first ever cohort of 38 Bahraini nursing students attending the first private University in Bahrain where the study took place. Qualitative data was analyzed using Colaizzi's methodology and quantitative data was analyzed using SPSS Version 17.

Results: The participants perceived nursing as caring, helping people and a humanitarian job. Nursing was considered to be a tough job and not well accepted socially with cultural issues impacting on the values attached to nursing as a career choice. Participants prior to entering nursing used the internet as the most potent source of information and they were also motivated by their parents and friends to join nursing. Participants stated their commitment to a nursing career, and their plans to continue with participation in higher education.

Conclusions: Some of the issues raised in the study are reflective of the international literature; however there are fundamental issues particular to the Gulf region, which will require attention in a context of an overall national nursing recruitment strategy.

RCSI Bahrain Publications 2013 with abstracts

87. Al-Baharna MM, Whitford DL. Clinical Audit of Diabetes Care in the Bahrain Defence Forces Hospital. Sultan Qaboos University Med J. 2013;13(4):520-6.

Objectives: Primary care audits in Bahrain have consistently revealed a failure to meet recognised standards of delivery of process and outcome measures to patients with diabetes. This study aimed to establish for the first time the quality of diabetes care in a Bahraini hospital setting. Methods: A retrospective clinical audit was conducted of a random sample of patients attending the Diabetes and Endocrine Center at the Bahrain Defence Forces Hospital over a 15-month period which ended in June 2010. The medical records of 287 patients with diabetes were reviewed electronically and manually for process and outcome measures, and a statistical analysis was performed. Results: Of the patients, 47% were male, with a median age of 54 years, and 5% had type 1 diabetes. Measured processes, including haemoglobin A1c, blood pressure, lipids, creatinine and weight, were recorded in over 90% of the patients. Smoking (8%) and the patient's body mass index (19%) were less frequently recorded. Screening for complications was low, with retinal screening in 42%, foot inspection in 22% and microalbuminuria in 23% of patients. Conclusion: This study shows that the implementation of recognised evidence-based practice continues to pose challenges in routine clinical care. Screening levels for the complications of diabetes were low in this hospital diabetes clinic. It is important to implement a systematic approach to diabetes care to improve the quality of care of patients with diabetes which could lead to a lowering of cardiovascular risk and a reduction in healthcare costs in the long term.

88. Alqahtani MM, AlAbsi MF. Comparative analysis between levofloxacin and ciprofloxacin to assess their bactericidal activity using antimicrobial susceptibility disk diffusion on isolates obtained from urine samples. J Bahrain Med Soc. 2013;24(2):53-5.

Background: Urinary tract infection is one of the most common clinical presentations at the Bahrain Defence Force Hospital (BDFH) where fluoroquinolone (ciprofloxacin) is the first-line prescribed antibiotic. Levofloxacin has recently been added to the antibiotic formulary. This study was based on culture-positive urine specimens collected in the period February 1 to August 31, 2011. The objective of this study was to analyze the antimicrobial sensitivity of ciprofloxacin compared to levofloxacin on clinical isolates obtained from patients with UTI at BDFH. Methods: The sensitivity analysis on both antibiotics was carried out using 5-microgram disk diffusion on 452 isolates obtained from patients. The in-vitro activity of the two fluoroquinolones was evaluated based on the zone of inhibition produced by each antibiotic. The values for the zones were obtained from the Clinical and Laboratory Standards Institute (CLSI-2011). Results: Overall levofloxacin provided an improved sensitivity response in patients with culture-positive Enterobacteriaceae (71%) as compared to ciprofloxacin (67%). In addition, the culture results showed that the most common UTI causative organisms in BDFH were E-coli (63.9%), followed by Klebsiella pneumoniae (17.3%), Proteus species (7.1%) and Pseudomonas aeruginosa (2.7%). There was a statistically significant difference ($p=.004$) in response to the two fluoroquinolones among the four groups of organisms. Levofloxacin showed statistically significant disk diffusion susceptibility response among E-coli ($M=20.38$, 95% CI [18.69, 22.07]) and Klebsiella pneumoniae ($M=26.33$, 95% CI [24.45, 28.22]) $p=.001$, while there was no significant difference in disk diffusion susceptibility response among Proteus species and Pseudomonas aeruginosa. Conclusion: Levofloxacin had a significantly better disk diffusion sensitivity response than ciprofloxacin in patients with E-coli and Klebsiella pneumoniae culture positive urine specimens.

89. AlQaseer A, AlAradi A. Immediate versus delayed laparoscopic cholecystectomy in patients with acute cholecystitis: A retrospective audit. Journal of the Bahrain Medical Society. 2013 //;24(3):108-11.

Background: Laparoscopic cholecystectomy has become the gold standard for the surgical treatment of acute cholecystitis. However, controversies still arise regarding the timing of the laparoscopic approach for optimum results. The aim of this study is to compare outcomes of early laparoscopic cholecystectomy versus delayed laparoscopic cholecystectomy. Method: During a 12-month period (01/03/11-10/04/12) all laparoscopic cholecystectomies performed were reviewed. Pre-operative, operative, and post-operative clinical notes and files were collected. A total of 43 patients were included in this audit as they met the selection criteria, with 24 patients in the early group versus 19 in the delayed. Of these, 29 were female and 14 male with a mean age of 41.8 years and 42.4 years respectively. Results: Cholecystectomy was successfully completed in 42 patients (97.67%), conversion to open was necessary in one patient in the early group. There was no morbidity, mortality, or injury to the common bile duct during this period. No significant difference was seen in terms of post-operative complications. Mean immediate post-surgery hospital stay was 1.04 days for the early group, compared with 1.53

days in the delayed. Conclusion: Early laparoscopic cholecystectomy for acute cholecystitis, within 48-72 hours of presenting symptoms, has proven to be the preferred approach by both surgeons and patients. It allows for a shorter hospital stay, satisfactory complication levels and reduced costs. A policy should be implemented to evaluate each patient individually, and consider associated co-morbidities and surgeons' experience.

90. Al-Saie AM, Henari FZ, Souier T, Bououdina M. Structural, optical and non-linear optics properties of highly doped molybdenum indium oxide thin film. Journal of Materials Science: Materials in Electronics. 2013 //:1-8.

Molybdenum (Mo)-doped In₂O₃ thin film with 10 wt% was successfully prepared by evaporation method. After annealing at 600 °C the film changes its colour from very dark to a clear transparent film. SEM and AFM analysis reveal that the film is continuous with high metallic coverage >98 % and exhibits a granular structure with typical grain size of 50 nm. More interestingly, the film shows more than 90 % transparency from visible to near infrared region and with wide optical band gap of 4.26 eV. The widening of the band gap is due to the Burstein-Möss (BM) effect as Mo will occupy In sites within the structure of the film thus increasing the carrier concentration thus enhancing its electrical properties. The nonlinear optical properties of Mo-doped In₂O₃ film with glass substrate were investigated using z-scan technique. Under cw excitation the film exhibits large reverse saturation absorption and negative nonlinearities. The real and imaginary parts of third order susceptibility of the film were measured and found that the imaginary part which arises from the change in absorption is dominant. © 2013 Springer Science+Business Media New York.

91. Borgan SM, Marhoon ZA, Whitford DL. Beliefs and Perceptions Toward Quitting Waterpipe Smoking Among Cafe Waterpipe Tobacco Smokers in Bahrain. Nicotine & tobacco research : official journal of the Society for Research on Nicotine and Tobacco. 2013 May 14. PubMed PMID: 23674839. Epub 2013/05/16. Eng.

INTRODUCTION: There is a rising prevalence of waterpipe smoking worldwide, but still a paucity of information on perceptions toward quitting waterpipe use. We set out to establish the beliefs and perceptions of cafe waterpipe smokers toward quitting waterpipe smoking in the Kingdom of Bahrain. **METHODS:** A cross-sectional study. A random sample of 20 of 91 cafes serving waterpipe tobacco in Bahrain was taken. A questionnaire was administered in each cafe to 20 participants aged 18 and above. **RESULTS:** Three hundred eighty participants completed questionnaires from waterpipe smokers. Eighty-four percent of participants were Bahraini and 71% have a university degree. Mean age was 28.9 years. Average age of waterpipe smoking initiation was 20.3 years. The majority of waterpipe users chose flavored tobacco. Sixty-one percent smoked waterpipe tobacco daily with a mean smoking time of 2.6hr/day. Seventy-two percent considered waterpipe tobacco as harmful as or more harmful than cigarettes, but 67% considered cigarettes as more addictive. Eighty-two percent stated that they could quit waterpipe at any time, but only 40% were interested in quitting. Interest in quitting smoking was related to 4 variables: a physician mentioning the need to quit smoking, being non-Bahraini, having a family with a hostile attitude toward waterpipe smoking, and not considering oneself "hooked" on waterpipe tobacco. **CONCLUSIONS:** Waterpipe smokers in Bahrain cafes are frequent and high users. Health professionals must consider waterpipe smoking in all consultations and health promotion messages. A partnership between health professionals and disapproving members of families may be an effective strategy in encouraging waterpipe smokers to quit.

92. Dakhel AA, Jasim KE, Cassidy S, Henari FZ. Extraction and dielectric properties of curcuminoid films grown on Si substrate for high-k dielectric applications. Materials Science and Engineering B: Solid-State Materials for Advanced Technology. 2013;178(16):1062-7.

Curcuminoids were extracted from turmeric powder and evaporated in vacuum to prepare thin films on p-Si and glass substrates for dielectric and optical investigations. The optical absorption spectrum of the prepared amorphous film was not identical to that of the molecular one, which was identified by a strong wide absorption band in between ~220 and 540 nm. The onset energy of the optical absorption of the film was calculated by using Hamberg et al. method. The dielectric properties of this material were systematically studied for future eco friendly applications in metal-insulator-semiconductor MIS field of applications. The complex dielectric properties were studied in the frequency range of 1-1000 kHz and was analysed in-terms of dielectric impedance $Z^*(\omega)$ and modulus $M^*(\omega)$. Generally, the curcuminoid complex can be considered as a high-k material and can be used in the environmental friendly production of microelectronic devices. © 2013 Elsevier B.V. All rights reserved.

93. Grey I, Al-Saihati BA, Al-Haddad M, McClean B. Reasons for referral, intervention approaches and demographic characteristics of clients with intellectual disability attending adult psychiatric outpatient services in the Kingdom of Bahrain. Journal of Intellectual Disability Research. 2013 //.

Background: Relatively little information is available regarding the use of psychiatric services by individuals with intellectual disability (ID) in Arab countries. The current study aimed to identify (1) the reasons for referral; (2) demographic characteristics of individuals referred; (3) previous contact with child psychiatric services; (4) psychiatric diagnoses; (5) level of ID; (6) nature of interventions; and (7) patterns of medication usage in individuals attending a specialist psychiatric service for individuals with an ID in the Kingdom of Bahrain. Method: Case file analysis was used. Files that recorded attendance at the specialist service within a specific calendar year were selected. A total of 537 files were available for review and 79 contained records indicating the individual had been seen within the year. Results: The primary referral reason to adult psychiatric services was the presence of behavioural disturbance. Pharmacological intervention was the dominant treatment choice and no individual was recommended for psychological/behavioural intervention. Psychiatric diagnosis was not recorded in over 90% of cases. Conclusion: Services in the Kingdom of Bahrain for individuals with ID rely exclusively on pharmacological approaches for the treatment of behavioural disorders. Implications for best practice guidelines are discussed. © 2013 John Wiley & Sons Ltd, MENCAP & IASSID.

94. Hayes A, Holden C, Gaynor D, Kavanagh B, Otoom S. Bridging the gap: A program to enhance medical students' learning experience in the foundation year. Bahrain Medical Bulletin. 2013;35(4).

Objective: To evaluate students' perceptions of the intervention program based on small group teaching, regular continuous assessment, science-based tailored study skills program and recorded attendance on students' enhanced learning experience in the first year of study in an outcome-based medical course. Design: Descriptive study. Setting: RCSI Bahrain. Method: A Twenty-seven-item questionnaire was administered to foundation year students at the Royal College of Surgeons in Ireland - Medical University of Bahrain (RCSI Bahrain) after the completion of the first semester to explore whether these interventions enriched the students' learning experience or not. Comparisons of pass rates in all modules over the four years were also included. Students' perceptions of the academic study skills course were collected through a questionnaire activity (version 2007120102) via the Virtual Learning Environment (VLE). Result: The results suggest that local adaptations of undergraduate programs may lead to pedagogical expertise that contribute to enhanced learning experience of students and better integration of pre-university and third-level courses. The majority of questionnaire items were rated positively and the comparison of pass rates showed the highest results in the year the intervention was implemented. Conclusion: Making local adaptations to medical programs without changing the core curriculum can mark good academic practice. Considering specific socio-cultural frameworks of students may lead to improvements in the delivery of programs in universities.

95. Henari FZ, Cassidy S, Jasim KE, Dakhel AA. Nonlinear refractive index measurements of curcumin with CW laser. Journal of Nonlinear Optical Physics and Materials. 2013 //;22(2).

We report on the measurements of the nonlinear reflective index coefficient for curcumin at three different wavelengths using a Z-scan technique. This material is found to be a new type of natural nonlinear media. It shows a large negative nonlinear refractive index of the order of 10^{-6} cm $2/W$. The origin of the nonlinearity was investigated by comparison of the formalism that is known as the Gaussian decomposition model with the thermal lens model. The nonlinear refractive index was found to vary with intensity and reveals that curcumin can be a promising material for optical limiting. © 2013 World Scientific Publishing Company.

96. Henari FZ, Jasim KE. All optical switching in henna thin film. Applied Physics B: Lasers and Optics. 2013 //:1-5.

The optical nonlinearity in henna (Lawson (2- hydroxyl-1,4 naphthoquinone) film was utilized to demonstrate all optical switching. The nonlinear absorption of the henna film was calculated by measuring the transmission of the laser beam ($\lambda = 488$ nm) as a function of incident light intensities. The observed nonlinear absorption is attributed to a two-photon absorption process. The pump and probe technique was used to demonstrate all optical switching. The switching characteristics can be utilized to generate all-optical logic gates such as simple inverter switches (NOT) NOR, AND NAND logic functions. © 2013 Springer-Verlag Berlin Heidelberg.

97. Horobin RW, Rashid-Doubell F. Predicting small molecule fluorescent probe localization in living cells using QSAR modeling. 2. Specifying probe, protocol and cell factors; selecting QSAR models; predicting entry and localization. Biotechnic and Histochemistry. 2013 //;88(8):461-76.

We describe the practical issues and the methodological procedures that must be carried out to construct and use QSAR models for predicting localization of probes in single cells. We address first the determination of probe factors starting with a consideration of the chemical nature of probe molecules present. What is their identity? Do new compounds arise in incubation media or intracellularly? For each probe, how many distinct chemical species are present? For each probe species, the derivation of the following numerical structure parameters, or descriptors, is set out with worked examples of electric charge and acid/base strength (Z and pK_a); hydrophilicity/lipophilicity ($\log P$); amphiphilicity (AI and HGH); conjugated bond number and largest conjugated fragment (CBN and LCF); width and length (W and L); and molecular and ionic weights, head group size and substituent bulk (MW , IW , HGS and SB). Next, protocol factors are specified by focusing separately on the mode of introduction of the probe to the cells, other application phenomena, and factors that influence directly observations of outcomes. Cell factors then are specified by considering separately structural and functional aspects. The next step is to select appropriate QSAR models and to integrate probe, protocol and cell factors to predict the interactions of the probe with the cell. Finally, we use an extended case example to explore the intracellular localization of certain photodynamic therapy dyes to illustrate these procedures. © 2013 The Biological Stain Commission.

98. Horobin RW, Rashid-Doubell F, Pediani JD, Milligan G. Predicting small molecule fluorescent probe localization in living cells using QSAR modeling. 1. Overview and models for probes of structure, properties and function in single cells. Biotechnic and Histochemistry. 2013 //;88(8):440-60.

Small molecule fluorochromes (synonyms: biosensors, chemosensors, fluorescent probes, vital stains) are widely used to investigate the structure, composition, physicochemical properties and biological functions of living cells, tissues and organisms. Selective entry and accumulation within particular cells and cellular structures are key processes for achieving these diverse objectives. Despite the complexities, probes routinely are applied using standard protocols, often without experimenter awareness of what factors that control accumulation and localization. The mechanisms of many such selective accumulations, however, now are known. Moreover, the influence of physicochemical properties of probes on their uptake and localization often can be defined numerically, hence predicted, using quantitative structure activity relations (QSAR) models with its required numerical structure parameters (or "descriptors"). The state of the art of this approach is described. Available QSAR models are summarized for uptake into cells and localization in the cytosol, endoplasmic reticulum, generic biomembranes, Golgi apparatus, lipid droplets, lysosomes/endosomes, mitochondria, eukaryotic nuclei (histones and DNA), plasma membrane, and ribosomal RNA (cytoplasmic and nucleolar). Integration of such core models to both aid understanding and troubleshooting of current fluorescent probes and to assist the design of novel probes is outlined and illustrated using case examples. Limitations and generic problems arising with this approach and comments on application of such approaches to xenobiotics other than probes, e.g., drugs and herbicides, together with a brief note about an alternative approach to prediction, are given. © 2013 The Biological Stain Commission.

99. Horobin RW, Stockert JC, Rashid-Doubell F. Uptake and localisation of small-molecule fluorescent probes in living cells: a critical appraisal of QSAR models and a case study concerning probes for DNA and RNA. Histochemistry and Cell Biology. 2013 //:1-15.

Small-molecule fluorochromes are used in biology and medicine to generate informative microscopic and macroscopic images, permitting identification of cell structures, measurement of physiological/physicochemical properties, assessment of biological functions and assay of chemical components. Modes of uptake and precise intracellular localisation of a probe are typically significant factors in its successful application. These processes and localisations can be predicted using quantitative structure activity relations (QSAR) models, which correlate aspects of the physicochemical properties of the probes (expressed numerically) with the uptake/localisation. Pay-offs of such modelling include better understanding and trouble-shooting of current and novel probes, and easier design of future probes ("guided synthesis"). Uptake models discussed consider adsorptive (to lipid or protein domains), phagocytic and pinocytotic endocytosis, as well as passive diffusion. Localisation models discussed include those for cytosol, endoplasmic reticulum, Golgi apparatus, lipid droplets, lysosomes, mitochondria, nucleus and plasma membrane. A case example illustrates how such QSAR modelling of probe interactions can clarify localisation and mode of binding of probes to intracellular nucleic acids of living cells, including not only eukaryotic chromatin DNA and ribosomal RNA, but also prokaryote chromosomes. © 2013 Springer-Verlag Berlin Heidelberg.

100. Jassim GA, Whitford DL. Quality of life of Bahraini women with breast cancer: a cross sectional study. BMC cancer. 2013;13:212. PubMed PMID: 23622020. Pubmed Central PMCID: PMC3644231. Epub 2013/04/30. eng.

BACKGROUND: Breast cancer can impact survivors in many aspects of their life. Scarce information is currently available on the quality of life of cancer survivors in Bahrain. The objective of this study is to describe the quality of life of Bahraini women with breast cancer and its association with their sociodemographic and clinical data. **METHODS:** This is a cross sectional study in which the European Organization for Research and Treatment of Cancer Quality of Life Cancer Specific version translated into Arabic was administered to a random sample of 337 Bahraini women with breast cancer. Relevant descriptive statistics were computed for all items. The equality of means across the categories of each categorical independent variable was tested using parametric tests (ANOVA and independent t-test) or non-parametric tests (Kruskal Wallis and Mann Whitney tests) of association where appropriate. **RESULTS:** Of the total sample, 239 consented to participation. The mean and median age of participants were 50.2 (SD +/- 11.1) and 48.0 respectively. Participants had a mean score for global health of 63.9 (95% CI 61.21-66.66). Among functional scales, social functioning scored the highest (Mean 77.5 [95% CI 73.65-81.38]) whereas emotional functioning scored the lowest (63.4 [95% CI 59.12-67.71]). The most distressing symptom on the symptom scales was fatigability (Mean 35.2 [95% CI 31.38-39.18]). Using the disease specific tool it was found that sexual functioning scored the lowest (Mean 25.9 [95% CI 20.23-31.56]). On the symptom scale, upset due to hair loss scored the highest (Mean 46.3 [95% CI 37.82-54.84]). Significant mean differences were noted for many functional and symptom scales. **CONCLUSION:** Bahraini breast cancer survivors reported favorable overall global quality of life. Factors associated with a major reduction in all domains of quality of life included the presence of metastases, having had a mastectomy as opposed to a lumpectomy and a shorter time elapsed since diagnosis. Poorest functioning was noted in the emotional and sexual domains. The most bothersome symptoms were fatigability, upset due to hair loss and arm symptoms. This study identifies the categories of women at risk of poorer quality of life after breast cancer and the issues that most need to be addressed in this Middle East society.

101. Loh KP, Ghorab H, Clarke E, Conroy R, Barlow J. Medical students' knowledge, perceptions, and interest in complementary and alternative medicine. Journal of Alternative and Complementary Medicine. 2013 //;19(4):360-6.

Background: Complementary and alternative medicine (CAM) is a growing industry in the health care system. In Ireland, to date there has not been a study that evaluates the knowledge of, interest in, and attitude of Irish medical students toward CAM. **Objectives:** This research can serve as a pilot study to inform Irish medical schools on the need to introduce CAM into the medical curriculum. **Materials and Methods:** The survey instrument was a modified design based on previously published studies carried out in other geographical areas. All medical students within the undergraduate and graduate entry programs (GEP) at the Royal College of Surgeons in Ireland were invited to participate in the study. SPSS software was used to analyze the results of the questionnaires. **Results:** The survey completion rate was 20.1%. A majority of students (78.4%) thought that CAM knowledge is important for their future career as physicians. Approximately 65% of students reported that they have not acquired sufficient knowledge about CAM from medical school, and 50.2% of students believe CAM should be incorporated into the medical curriculum. Preclinical years (49.4%) were suggested as the most appropriate time to learn about CAM. Knowledge of CAM modalities was generally rated as minimal or none by students. Among the 15 CAM modalities incorporated in the survey, massage, acupuncture, and meditation received the highest interest from students. Students who believe in a religion had a higher interest in CAM ($p < 0.05$). In terms of their personal view, massage, spirituality, and acupuncture received the highest positive responses. Attitudes toward CAM were positive from students. Lower willingness to use CAM was seen in clinical students ($p < 0.05$). **Conclusions:** It is important for the faculty of Irish medical schools to consider the possibility of integrating CAM education into the conventional medical curriculum in a systematic manner to better prepare students in their future career. © Copyright 2013, Mary Ann Liebert, Inc. 2013.

102. McDonald C, Whyte T, Taylor SM, Sanz S, Brechin EK, Gaynor D, et al. Progressive decoration of pentanuclear Cu(ii) 12-metallacrown-4 nodes towards targeted 1- and 2D extended networks. CrystEngComm. 2013 //;15(34):6672-81.

The synthesis, structures and magnetic characterisation of a family of discrete planar pentanuclear Cu(ii) 12-MC-4 metallacrowns of formulae $[\text{Cu}_5(\text{L}1)_4(\text{MeOH})_4](\text{ClO}_4)_2$ (1), $[\text{Cu}_5(\text{L}1)_4(\text{py})_2](\text{ClO}_4)_2 \cdot 2\text{py}$ (2), $[\text{Cu}_5(\text{L}1)_4(\text{py})_6](\text{ClO}_4)_2$ (3) and $[\text{Cu}_5(\text{L}2)_4(\text{MeOH})_4](\text{ClO}_4)_2 \cdot 2\text{H}_2\text{O}$ (7) (where $\text{L}1\text{H}2 = 2$ -dimethylamino)phenylhydroxamic acid and $\text{L}2\text{H}2 = 2$ -(amino)phenylhydroxamic acid) are reported. UV-vis and Electrospray MS studies indicate solution stability with respect to their $\{\text{Cu}_5(\text{L})_4\}^{2+}$ cores. Magnetic susceptibility measurements confirm strong antiferromagnetic exchange between the Cu(ii) ions resulting in isolated $S = 1/2$ ground spin states. The introduction of ditopic co-ligands such as 4,4'-bipyridine (4,4'-bipy), pyrazine (pz) and 4,4'-azopyridine (4,4'-azp) results in their coordination at a number of axial Cu(ii) sites within the $\{\text{Cu}_5\}$

metallacrown nodes to afford the extended networks $\{[\text{Cu}_5(\text{L}1)_4(4, 4'\text{-bipy})_3](\text{ClO}_4)_2 \cdot (\text{H}_2\text{O})\}_n$ (4), $\{[\text{Cu}_5(\text{L}1)_4(4,4'\text{-azp})_2(\text{MeOH})_2](\text{ClO}_4)_2\}_n$ (5) and $\{[\text{Cu}_5(\text{L}2)_4(\text{pz})_2(\text{MeOH})_3](\text{ClO}_4)_2 \cdot \text{MeOH}\}_n$ (6). © 2013 The Royal Society of Chemistry.

103. Parsanezhad ME, Jahromi BN, Salarian L, Parsa-Nezhad M. Surgical management of a rare form of cervical dysgenesis with normal vagina, normal vaginal portion of the cervix and obstructed uterus. Archives of Iranian Medicine. 2013;16(4):246-8.

This case was an extremely rare form of cervical dysgenesis that presented with cyclic pain. Diagnostic laparoscopy and vaginoscopy showed the presence of a blind uterus at the level of the internal cervical os with a normal vagina and exocervix. Müllerian ducts are the embryologic origin for the uterus, cervix and upper part of the vagina. Müllerian duct migration initiates from the upper part of the Müllerian system. Therefore an obstructed uterus is usually associated with cervical and upper vaginal anomalies. This case was unusual because of the presence of an isolated segmental atresia at the level of the internal cervical os. However the vaginal portion of the cervix, vagina and urinary system were normal. We theorized that the absence of an appropriate fusion between the Müllerian duct and its underlying mesoderm, loss of cell-to-cell communication and special gene expression during a critical time period or a vascular accident between 12-22 weeks of gestation might have caused this anomaly. The patient underwent a laparotomy to create a utero-cervical canal using a peritoneal graft.

104. Reefy SA, Kameshki R, Sada DA, Elewah AA, Awadhi AA, Awadhi KA. Intracystic papillary breast cancer: A clinical update. ecanecermedicalsience. 2013;7(1).

Introduction: Intracystic (encysted) papillary cancer (IPC) is a rare entity of breast cancer accounting for approximately (1-2%) of all breast tumours [1], usually presenting in postmenopausal women and having an elusive natural history. The prediction of the biological behaviour of this rare form of breast cancer and the clinical outcome showed its overall favourable prognosis; however, its consideration as a form of ductal carcinoma in situ with non-invasive nature is to be reconsidered as it has been shown to present histologically with invasion of basement membrane and even metastasis [2]. The objective of this review is to shed some light on this rare, diagnostically challenging form of breast cancer, including its radiological, histological, and molecular characteristics and its pathological classification. The final goal is to optimize the clinical management including the role of sentinel lymph node biopsy (SLNB), general management with adjuvant radiotherapy (RT), mammary ductoscopy, and hormonal treatment. Methods: A literature review, facilitated by Medline, PubMed, and the Cochrane database, was carried out using the terms 'Intracystic (encysted) papillary breast cancer'. Results: Intracystic papillary breast cancer (IPC) is best managed in the context of a multidisciplinary team. Surgical excision of the lump with margins in excess of 2 mm is considered satisfactory. Sentinel lymph node biopsy (SLNB) is recommended as data have shown the possibility of the presence of invasive cancer in the final histology. RT following IPC alone is of uncertain significance as this form of cancer is usually low grade and rarely recurs. However, if it is associated with DCIS or invasive cancer and found in young women, radiotherapy may be prudent to reduce local recurrence. Large tumours, centrally located or in cases where breast conserving surgery is unable to achieve a favourable aesthetic result, a skin sparing mastectomy with the opportunity for immediate reconstruction can be offered. Adjuvant endocrine therapy may be suggested as almost certainly these tumours are hormonal positive. Conclusion: Further research is required to determine the role of adjuvant radiotherapy and endocrine therapy in IPC. Understanding the low-grade nature of this form of breast cancer allows treatment options to be less radical and safely omitted. Copyright: © the authors.

105. Saleh LM, Hassan HA, Henari FZ, Patil PS, Bannur MS. Nonlinear refractive and optical limiting measurements of 2-thienylchalcone derivatives under cw laser regime. Applied Physics A: Materials Science and Processing. 2013:1-6.

The nonlinear refractive index of 2-thienylchalcone derivatives in solution was investigated using z-scan technique with a continuous wave Argon ion laser. The results show that 2-thienylchalcone derivatives exhibit a large nonlinear refractive index at 488 nm. The optical limiting behaviour based on nonlinear refractive index was also investigated. The fluorescence from the samples was recorded and the relationship between the variation of nonlinear refractive index values and optical limiting values with fluorescence intensity were investigated. The results indicated that 2-thienylchalcone derivatives could be promising candidates for application on nonlinear photonic devices. © 2013 Springer-Verlag Berlin Heidelberg.

106. Sharkawi M, Alfadhel HE, Burns MD, Given M, Lee MJ. Mid-term follow-up of stenting in chronic mesenteric ischaemia: a review of six cases. Irish Journal of Medical Science. 2013 //:1-5.

Background: Chronic mesenteric angina is a rare condition with high morbidity and mortality, which occurs due to stenosis or occlusion in the mesenteric vessels commonly due to atherosclerosis. Typically, patients present with worsening postprandial abdominal pain, chronic weight loss and fear of food. The condition can be treated by surgical bypass, but also by percutaneous transluminal angioplasty and stenting of the affected mesenteric arteries. Aim: To assess the mid-term outcomes in patients treated by endovascular stenting for chronic mesenteric ischaemia (CMI). Methods: Six patients were treated for symptomatic CMI. In total, six severely stenosed vessels were stented including the superior mesenteric artery (n = 5) and coeliac artery (n = 1). A retrospective review of these patients was performed with end points including symptom recurrence, major morbidity and mortality. The mean follow-up was 16.5 months (range 5-28 months). Results: Initial clinical success was observed in all six patients. Four patients were clinically asymptomatic, but died within 18 months after the procedure from other conditions. One patient suffered from recurrence of symptoms. Only one patient died as a consequence of mesenteric artery re-stenosis. Conclusion: Stenting of mesenteric vessels has shown excellent early and mid-term clinical success in selected patients. Though no direct comparison with open revascularization surgery was performed in this case series, technical and mid-term clinical success is promising. © 2013 Royal Academy of Medicine in Ireland.

107. Sridhar S, Al-Moallem B, Kamal H, Terrile M, Stallings RL. New insights into the genetics of neuroblastoma: Implications for diagnosis and therapy. Molecular Diagnosis and Therapy. 2013 //;17(2):63-9.

Neuroblastoma is a genetically and clinically heterogeneous tumor of childhood, arising from precursor cells of the sympathetic nervous system. It is still a challenging cancer for pediatric oncology, as some tumors will spontaneously regress, while others will become refractory to all forms of therapy. The clinical course of this disease is greatly influenced by both patient age and the genetic abnormalities that occur within the tumors. MYCN (v-myc myelocytomatosis viral related oncogene, neuroblastoma derived (avian)) amplification and loss of chromosome 11q heterozygosity have been known to be indicative of poor prognosis. In this article, we review how mutations and structural alterations in specific genes contribute to inheritable predisposition to neuroblastoma and/or to aggressive disease pathogenesis, as well as implications for diagnosis and therapy. These genes include PHOX2B (paired-like homeobox 2b), ALK (anaplastic lymphoma receptor tyrosine kinase), and ATRX (alpha thalassemia/mental retardation syndrome X-linked). © 2013 Springer International Publishing Switzerland.

108. Tierney E. The role of doctors as teachers. Bahrain Medical Bulletin. 2013 //;35(3).

109. Tierney E, Corbally MT. World Health Organization (WHO) surgical safety checklist. Bahrain Medical Bulletin. 2013;35(4).

110. van Zuuren E.J., Albusta A.Y., Fedorowicz Z., Carter B., Pijl H. Selenium Supplementation for Hashimoto's Thyroiditis: Summary of a Cochrane Systematic Review. Eur Thyroid J 2013.

Selenium supplementation in people with Hashimoto's thyroiditis might reduce antibody levels and result in a decreased dosage of levothyroxine (LT4) and may provide other beneficial effects (e.g. on mood and health-related quality of life). The aim of our systematic review was to assess the effects of selenium supplementation on Hashimoto's thyroiditis. We searched The Cochrane Library, MEDLINE, EMBASE and Web of Science for randomized controlled trials. Study selection, data extraction, assessment of risk of bias and analyses were carried out by two independent review authors. We assessed the quality of the evidence of included studies using GRADE. Four studies rated at unclear to high risk of bias comprising 463 participants were included. One study at high risk of bias showed statistically significant improvement in subjective well-being with sodium selenite 200 µg plus titrated LT4 compared with placebo plus titrated LT4 (RR 4.67, 95% CI 1.61-13.50). Selenomethionine 200 µg as a single treatment or combined with LT4 reduced the serum levels of anti-thyroid peroxidase antibodies compared with placebo (or placebo plus LT4) in three studies (p < 0.001). Although the changes from baseline were statistically significant in these three studies, their clinical relevance is unclear. In conclusion, the results of these four studies, assessed at unclear to high risk of bias, show that evidence to support or refute the efficacy of selenium supplementation in people with Hashimoto's thyroiditis is incomplete and not reliable to help inform clinical decision making.

111. Whately C, Mohamed Abdallah A, Alwatari YA. Management of large segmental tibial defects using locking IM nail and absorbable mesh. BMJ Case Reports. 2013 //.

Tibia accounts for the majority of open fractures with long segmental defects. The management of such defects imposes several challenges due to their associations with extensive soft tissue damage and high infection risk. In this report, we describe a new technique for the reconstruction of tibia in a young patient with 10 cm defect. The patient had a history of Gustilo Anderson type IIIB open fracture following a motorcycle accident. He was initially managed with multiple debridements and application of an external fixator. The defect was treated with the insertion of an antibiotic-coated intramedullary nail along with posterolateral bone grafting using an absorbable mesh. Six months postoperative, radiological assessment showed excellent callus formation diffusely around the intramedullary nail along with optimal alignment. The preliminary follow-up data are quite encouraging and the technique described in our case can be considered as a reasonable option in managing long segmental bone defects. Copyright 2013 BMJ Publishing Group.

112. Whitford DL, Al-Anjawi HA, Al-Baharna MM. Impact of clinical inertia on cardiovascular riskfactors in patients with diabetes. Primary Care Diabetes. 2013.

Aims: To determine whether clinical inertia is associated with simpler interventions occurring more often than complex changes and the association between clinical inertia and outcomes. **Methods:** Prevalence of clinical inertia over a 30 month period for hyperglycaemia, hypertension and dyslipidaemia was calculated in a random sample (n = 334) of patients attending a diabetes clinic. Comparisons between prevalence of clinical inertia and outcomes for each condition were examined using parametric tests of association. **Results:** There was less clinical inertia in hyperglycaemia (29% of consultations) compared with LDL (80% of consultations) and systolic BP (68% of consultations). Consultations where therapy was intensified had a greater reduction in risk factor levels than when no change was made. No association was found between treatment intensity scores and changes in HbA1c, LDL or blood pressure over 30 months. **Conclusions:** Physicians are no more likely to intervene in conditions where simple therapeutic changes are necessary as opposed to complex changes. Greater clinical inertia leads to poorer outcomes. There continues to be substantial clinical inertia in routine clinical practice. Physicians should adopt a holistic approach to cardiovascular risk reduction in patients with diabetes, adhere more closely to established management guidelines and emphasize personal individualized target setting.

113. Whitford DL, Paul G, Smith SM. Patient generated "frequently asked questions": Identifying informational needs in a RCT of peer support in type 2 diabetes. Primary Care Diabetes. 2013 //.

Aims: The purpose of this study is to discuss the use of a system of patient generated "frequently asked questions" (FAQs) in order to gain insight into the information needs of participants. **Methods:** FAQs generated during group meetings taking place in a randomized controlled trial of peer support in type 2 diabetes are described in terms of their frequencies and topic areas. Data from focus groups and semi-structured interviews concerning the FAQs was subjected to content analysis. **Results:** 59/182 (33%) of the FAQs were directly related to the topic area of the scheduled peer support meeting with foot care, eyes and kidneys generating the most specific questions. The FAQs addressed mainly knowledge and concerns. The FAQs appeared to enhance peer support and also enabled participants to ask questions to experts that they may not have asked in a clinic situation. **Conclusions:** The use of FAQs to support peer supporters proved beneficial in a randomized controlled trial and may be usefully added to the tools used within a peer support framework. The use of FAQs provided valuable insight into the informal information needs of people with diabetes. Means of providing a similar structure in routine clinical care should be explored. © 2013 Primary Care Diabetes Europe.